



FRIDAY, JUNE 9.

## Contributions.

## A Blunder of the Committee on Patents.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Patents issue from the U. S. Patent Office at the rate of 350 per week—18,000 per year. At present there are over 258,000 patents, exclusive of reissues, to say nothing of the old patents before the present series of numbers began. At this rate it will be seen that at the end of the century there will be 350,000 additional patents, taking no account of the proportionate rate of increase from year to year. It can thus be appreciated what an amount of capital is invested in this sort of property throughout the country, but more particularly what general interest is taken among all classes in the matter of invention. The prosperity of all our manufacturing interests rests upon it, as upon a cornerstone.

But notwithstanding this general interest, this whole mass of inventions is not digested. Parties who are interested in certain classes of invention have no means of finding out what has been done in this special line, except by the weary and uncertain process of consulting specification after specification, and these they are not always certain of obtaining, inasmuch as many are exhausted, and many more have never been printed.

Realizing this want of a digest of American Patents, a want long since supplied in England, the present Commissioner, Mr. Marble, asked an appropriation of Congress one year ago to institute a "Division of Abridgements," the special duty of which should be the briefing of every specification, classifying them in special volumes and supplying each volume with an exhaustive index, thus placing in the hands of the people a set of books in which they might find in the course of a few minutes reliable information in regard to any patent ever issued from the United States Patent Office.

The division was started and the men have been trained, and have nearly completed the briefs of the Agricultural Division of patents. The Commissioner, in presenting his report for the current year, has asked for an appropriation continuing the work, and his request has been refused by the Committee on Patents in the House.

Thus we have another evidence of the stupidity with which things are sometimes managed at Washington. The fact is the average Representative has no intelligent conception of the universality of the patent interests of the country. The Committee on Patents have by this action given a check to the progress of American invention, have positively put an impediment in the way of one of the most flourishing interests of the country, instead of guarding it according to their sworn duty, and made an exhibition to their constituents in a most striking manner of their ignorance.

The House Committee on Appropriations should therefore take this matter into consideration in their recommendations in the Civil Sundry Appropriations bill before it is too late, or let it meet this issue in any other way its judgment may dictate. The work must necessarily be done at some time; it is inevitable. A blunder has been made which should be rectified.

M. A. T.

## Papers on Painting.—No. 7.

BY CHARLES L. CONDIT.

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## SUBSTANCES WHICH GIVE HARDNESS TO OIL AS A PAINT.

A paint needs hardness in order to withstand the friction (1) of rain and storm, (2) of fine particles of sand or cinders blown against it by the wind, (3) and injuries and accidents of all kinds which tend to rub off and deface its coats. The oil itself is also better for protection from the oxygen of the air, which, having hardened it, tends to harden it too much, and finally to change it into carbonic acid and water.\* An oil varnish may be called a hard paint. It is made so by removing the soft, non-drying oil acids by boiling the oil, and also by changing them into soaps. Finally, the oil is hardened by mixing it with "gums." An oil varnish may be called a "gum" paint, and the hardening of oil is always produced in the same manner, namely, by mixing it with fine particles of hard substances. It remains to study the effect upon the oil of each kind of these substances—lead, zinc, iron, etc.

There are those who are inclined to believe that all soap-making between pigments and oil is injurious to the durability of paint. There is ground for this in the fact that white lead, which forms some soap with oil, is less durable than iron paints, which are, to a greater extent, merely powders held in a coat of dried oil. It is probably true in general that no longer life is given to oil by changing it into a soap. It is, however, an advantage to get a hard paint immediately, if by so doing we can also retain the elasticity of the oil. This we accomplish by using red lead as a pigment. The red lead gives up some of its oxygen to the oil and changes part of it into an oxy-linseed-oil acid; with which the lead unites to form a hard oxy-linseed-oil acid,

\* As an illustration of the protection of mere hardness a freshly painted and varnished car will often suffer severe injury by immediate exposure to a hot summer's sun. Its paint soon thereafter peels.

oxide-of-lead soap. And yet red lead is a lasting paint, long retaining its elasticity and a certain power of holding itself together.

We do not get this soap in the case of other substances united with the oil, because neither the zinc, iron, and only part of white lead, gives up its oxygen to the oil, although they all contain oxygen, while the red lead also gives a hard substance with which to unite with the oil acid—i. e., it makes hard oxy-linseed-oil acid, oxide-of-lead soap.

Of these facts we may be sure, if we can trust so able a chemist as Mulder.

*Mulder's Experiments.*—Having clearly seen the excellence of a red-lead paint, Mulder conceived the idea of making a good, cheap paint by combining (mixing) hard powders of cheap substances with it. For the oil, he took a boiled linseed oil, containing  $2\frac{1}{2}$  per cent. of lead oxide; 100 parts of this oil to each mixture. The iron paint spoken of consisted of substances as follows:\*

Water.....	2.75 parts	71.02 parts iron.
Red oxide of iron.....	68.27 "	
Clay.....	27.60 "	
Muri.....	.27 "	28.27 parts clay.
Chalk.....	.40 "	

This was a purchased paint from a maker of iron paints well known in Holland. The other substances used were as finely powdered as possible. Two hundred parts of fine sand with 5 parts of red lead and oil gave a paint of some worth. Red lead 25 parts with 40 parts of iron paint gave a very good covering; 20, 40, 65 and 90 parts to 100 parts of iron paint were excellent. Twenty to 90 parts of red lead and 50 parts of red roof tiles gave a thick, heavy covering; 40 parts of red lead and 100 parts of roof tiles gave an excellent covering. Finally, 20 to 90 parts of red lead to 100 parts of powdered ironstone gave a paint of distinguished excellence. The iron plate on which these substances were painted was partly washed with sulphuric acid before painting. After painting it was exposed to wind and rain until the unpainted side was covered with rust, but no trace of rust appeared on the painted side. After 10 months Mulder speaks of the undoubted success of the experiment. The paints were holding well and evenly as very hard, thick coverings. Mulder thus sums up the method of making a cheap, hard and well protecting paint:

1. By boiling oil with 2 to 3 per cent. of oxide of lead (litharge or red lead) to harden the soft non-drying and free oil acids.
2. Some oxide of lead as pigment: red lead the best (uniting with and giving additional hardness to the oil).
3. Hard indifferent powders, made as fine as possible, and as much used as the mixture will bear as a good paint.

*The Theory of a Good Paint.*—The above seems to represent the true theory of a good paint. It is doubtful whether we can add lasting elasticity to a raw oil by boiling it, but we can possibly keep its elasticity longer and also harden the oil; and get a quicker drying oil.

Too much drier must not be used or the result will be too hard and brittle an oil, without elasticity.

*White Lead.*—The soap-making of white lead with oil is certain, but not easy to understand. The following appear to be facts, based upon the experiments of Mulder and on those of two English chemists:

White lead is composed of two kinds of lead. The whiteness and covering power are due to one, the strength and hardness of the paint to the other.

White lead consists of carbonic acid lead and water lead. No. 1, in table 14 below, is a good, dense lead, specific gravity 6.82; No. 2, a dry white lead, specific gravity 6.50; No. 3 is a crystalline, transparent lead.

	TABLE NO. 14.	No. 1.	No. 2.	No. 3.
Oxide of lead.....		85.95	86.18	83.53
Carbonic acid.....		11.14	10.44	15.70
Water.....		2.91	3.37	0.75

	TABLE NO. 15.	Lead.	Carbonic acid.	Water.
White lead, best quality.....		86.80	11.16	2.00
" " 2d quality.....		86.24	11.68	1.81
" " 3d quality.....		86.03	12.28	1.68
Residue lead.....		84.49	14.10	0.93
Useless lead.....		83.47	10.15	0.25

White lead should contain:

Oxide of lead linked with water, at least.....	25 parts.
Carbonic acid lead.....	75 "
	100 "

The carbonic acid lead gives the whiteness; the hydrated oxide of lead only hardness, but without it there is no paint, only a wash.

The difficulty with a very white lead which contains no water lead is that it will not harden, but easily brushes off like a lime whitewash. If abundance of oil has been used and this difficulty occurs, the painter may be quite sure that the lead has not been properly made. Carbonic acid lead produces some change in the oil; it makes it into a sort of emulsion. To make the matter very clear, we will suppose that this emulsion, like other emulsions, consists of very fine drops of oil which dry as drops and not into a continuous sheet as does ordinary oil. This may not be the explanation, however. If the reader will turn to Table No. 5 (page 269, number of May 5), he will discover that carbonic acid has some effect on oil. White lead paint in an atmosphere of carbonic acid was "set" in 24 hours, but was not adherent to the wood in 72 hours.

It may be that carbonic acid of carbonic acid lead unites in some way with oil. In any case, it is the carbonic acid lead which makes the paint white and which causes it to powder; it is the hydrated oxide (water lead) which makes part of the oil into a soap and hardens the paint. Both, probably, add somewhat to the ease of working, so that we may illustrate

\* In the absence of American analyses of iron paints, the above is given in full as an illustration of their composition.

the effect of white lead on oil by the effect of soap in washing one's hands. (See "Soap," article published April 28).

The effect of soap-making, both in boiling oil with or without driers, and also in making a hard paint is, as we shall see, injurious to the color of the paint. Mulder recommended to artists a white lead which should contain no water lead, and therefore would produce no soap; but Messrs. Wigner and Harland, of England, have shown, as above, that this would not do as a paint. Mulder's conclusions harmonize with those of these English chemists, but were not so clear as theirs, for he was puzzled to find the effects of soap-making (ease of working of the paint) without other results produced by a soap.

Were it not for its tendency to change in mixture, especially with other leads, red lead would in some respects form a better basis for useful paints than white lead, at a period when white is less fashionable than mixed hues. It gives an elastic, durable paint, which has no tendency to powder or scale. It has been accused of a tendency to blister, but a practical ship painter of very large experience, working under conditions which would tend to produce blistering, denies the fact of this tendency, and attributes such difficulty when occurring on iron to rust or scale underneath, or to painting iron while still wet with sea water. Given a tendency to blister under very great heat, this is due to the elastic quality which it retains in the oil, preventing the oil from drying into hard oil-leather. Red lead with zinc white and chrome or other green gives a beautiful series of tints, now fashionable.

*The Powdering of White Lead.*—As we have seen, at least one-fourth of a properly made white lead is a substance (water lead) which may be compared to red lead in its effects upon the oil. The other three-fourths of the lead injure the oil as a paint, but give all the covering power, as water lead (hydrated oxide of lead) has no coloring properties whatever. The powdering of the lead is due to this three-fourths of carbonic acid lead; the change in color to the soap-making between the water lead and the oil, producing more or less oxy-oil acid which in the shade becomes red.\*

We venture to make these bold statements on these disputed points because the experiments of Messrs. Wigner and Harland, of England, combined with Mulder's work and observation, throw great light on the subject.

There may be another cause for the powdering of lead, as facts in our own experience indicate, and as Messrs. Harrison & Bros., of Philadelphia, state in their circular, namely, the use of too little oil with the lead.

Mulder speaks of 250 to 280 per cent. of white lead as recommended by practical men; but advises 52 parts as sufficient for all soap-making purposes for 100 parts by weight of oil. He admits, however, that very much more than this does not produce a hard, brittle paint, as it would do if there were much soap-making with the oil. Within the house, 700 or even 1,000 parts by weight of lead to 100 parts of oil are used without producing a paint which is either brittle or powdery, and which has the great advantage of holding its color. We may, therefore, reasonably lay the blame of much if not all the powdering of white lead, since Messrs. Wigner and Harland's experiments prove that a pure carbonic lead paint will entirely powder like white-wash, upon the carbonic acid lead. The hardening and quick drying of the lead is to be entirely credited to the hydrated oxide of lead; but if we desire a lead which will undergo the least change of color, we must seek one with at least as little as 25 per cent. of water lead. Less than this will give us a bad paint.

The adulteration of white lead may be an advantage. Messrs. Wigner and Harland say that 5 per cent. of adulteration does not injure the covering power of the lead; but 10 per cent. does. Aside from loss of so great covering power, an adulteration of 15 per cent. would not be a great injury to paint for rougher outside work, and if done honestly, no injury to the man who should boldly state this to be his formula of composition.

Lead made by the Dutch process is often not so white as other lead, because the manure which is used to produce heat about the pots gives rise to sulphur gas, which may unite with lead and form more or less black sulphide of lead. Tan is mixed with the manure, and in other countries tan and pyroligneous acid are used. The German process of making lead is in closets or chambers, not in pots; the French process, by passing carbonic acid through a solution of acetic acid (vinegar) lead. This gives a very white lead, but one containing large particles which are more or less in the condition of crystals. Stein says the French process lead soaks up more oil, and gives this as the reason why the lead does not cover so well. The truer reason is, probably, that given by the article which follows this.

White lead is made by the use of acetic (vinegar) acid, and there remains more or less acetic acid lead in the product. If this is not thoroughly washed away, the spread paint has the appearance of "small pox," from dry, hard masses, produced by the acetic acid lead. These will form before the lead is used.

The red tinge in some white leads is apparently due to the presence of silver in the lead ore, which prevents some particles of lead from changing so rapidly into white lead as the other portions of the corroding metal. "In 1868 a large quantity of lead was decolorized by means of zinc, at the Sheffield Lead Works, leaving a quantity of silver, which varied from 15 dwts. to 1 oz. of silver per ton. About 80 tons of this lead were placed in the stocks for corrosion, when the whole of it came down of a uniform pink tint.\*"

\* Grünberg, inventor of several improvements in the manufacture of white lead, produced a process with a tendency to produce an excess of water-lead, and it is stated that such lead would turn yellow in an hour after mixture with oil.



Lead long mixed with oil (old tub lead) is much better than fresh lead; it covers better, and has been said to change less in color, but of this fact I am not at all sure. The change is not so much in the lead as in the oil. The carbonic acid lead produces an emulsion with the oil, that is to say it separates it in some way, possibly into very fine drops. The long standing may allow the oil time to recover partly from this effect, and it certainly causes it to unite more closely with the water lead as soap. Old lead, therefore, for both these reasons, is stiffer, and does not always work so easily, but can cover more surface with a harder and more permanent covering. All the mysteries of this subject cannot be cleared up, but I have given the reader those conclusions which seem to me best to harmonize with and to be supported by the best authorities who have made thorough investigation of this subject.

**Zinc White.**—Zinc does not so easily unite with the oil as lead, and does not at once so harden the soft not-drying oil acids. It does not, therefore, dry so quickly, nor makes so hard or so bright a paint. It has some soap-making power, however, and after a long time gives a hard covering, which takes a good polish, washes well, and stands a long wear within doors. Red lead appears to be an advantage to zinc (where color allows of its use) in giving it greater covering power, drying it quickly, and producing immediately a hard paint.

**Iron Paints.**—It is possible for iron to form a soap with the oil, but it is formed slowly, if at all; and iron paints, and most ochres, are therefore slow driers. In the case of ochres this is partly due to the soaking up of the oil by the clay which they contain, and the same may be said of adulterated iron paints. Some ochres take up as much as 30 per cent. of oil, while white lead consumes less than 10 per cent., and zinc only about 14 per cent. I give at the close of this article a table of oil required in grinding different paints, which Prof. Max Pettenkofer, of Munich, obtained from a manufacturer. It throws great light on the slow drying of some paints, and the differences between paints in this regard. As a rule the less soap-making power and the more porous a substance is, the more oil it consumes.

100 parts (weight)	White lead.....require	12 parts of oil.*
" "	Zinc white.....	14 "
" "	Green chrome.....	15 "
" "	Chrome yellow.....	19 "
" "	Vermilion.....	25 "
" "	Light red.....	31 "
" "	Madder-lake.....	62 "
" "	Yellow ochre.....	66 "
" "	Light ochre.....	72 "
" "	Camel's brown.....	75 "
" "	Brown manganese.....	87 "
" "	Terre verte.....	100 "
" "	Parisian blue.....	103 "
" "	Burnt terre verte.....	112 "
" "	Berlin blue.....	112 "
" "	Ivory black.....	112 "
" "	Cobalt.....	125 "
" "	Florentine brown.....	150 "
" "	Burnt terra sienna.....	181 "
" "	Raw terra sienna.....	240 "

\* Usually 9 or 10 parts.

[TO BE CONTINUED.]

#### New York Central Standard Gondola or Platform Car.

The engravings this week conclude our illustrations of the freight cars of the New York Central & Hudson River Railroad. The same truck is used under all of them, with the Master Car Builders' standard axle, journal box, journal bearing and pedestal. These cars are a fair representation of the latest practice in the construction of this kind of rolling stock.

#### Railroad Christianity.

The convention of Young Men's Christian associations in the interest of railroad work, which closes at the City Hall to-day, is a thoroughly interesting body, and has had so much to show for the labor which has been already expended in behalf of this special cause that it must contribute to the encouragement and extension of railway branches. It is only 10 years since the first important move was made in this direction. Prayer meetings had been held in the depot at Cleveland by employers, and doubtless also in other depots, but we hear of the experiment at Cleveland because there the effort was persistent, and in these meetings an official whose position gave him some influence was converted, and the matter was pressed to action. There, in 1872, representatives of the railway companies centering in Cleveland and the active members of the association consulted together, and a railroad men's reading-room was opened, the first in the country under religious influences. Immediately the work was taken up in various quarters of the country. It will be remembered that it was even started here, but Springfield was unfortunate with its Christian Association at that time and ever since, and nothing was established here. In the West the scheme took rapidly and strongly, and there, in Columbus, Chicago, St. Louis, Detroit, Louisville, Toledo, Indianapolis and other cities it flourishes with great success. Eastward the New York Central & Hudson River road has been foremost in acceptance of the idea. Reading-rooms are established, well furnished with papers and magazines and reviews, many of them supplied with libraries, musical instruments, pictures; some also with all the conveniences for social suppers and other gatherings. In short, the association and the railway men, working on the level of common sense and daily needs, have struck a practical vein, and have achieved success. Nor is this centre and focus all of the work; it extends itself in various directions. Religious meetings are held; special cottage meetings also in the homes of the men; brakemen are visited in their cabooses, men suffering from injuries or other sick persons in the families of employes are attended, and a frank and

\* Some of our soft American leads contain a little bismuth, which, being lighter than lead, sometimes collects at the top of the melting kettle, and buckles are produced containing much bismuth, which remain black in the carbonic acid atmosphere where the white lead is corroded.

† The soap-making of zinc and iron paints is probably almost entirely with the not-drying acids. As these become free from the glycerine ether, they slowly unite with the metal as soaps. For this reason paints (see table 11, article 4) lose more in weight when heated than simple oil. The metal has held the drying acids as soaps.

straightforward interest is shown in the affairs of all men engaged in railway work.

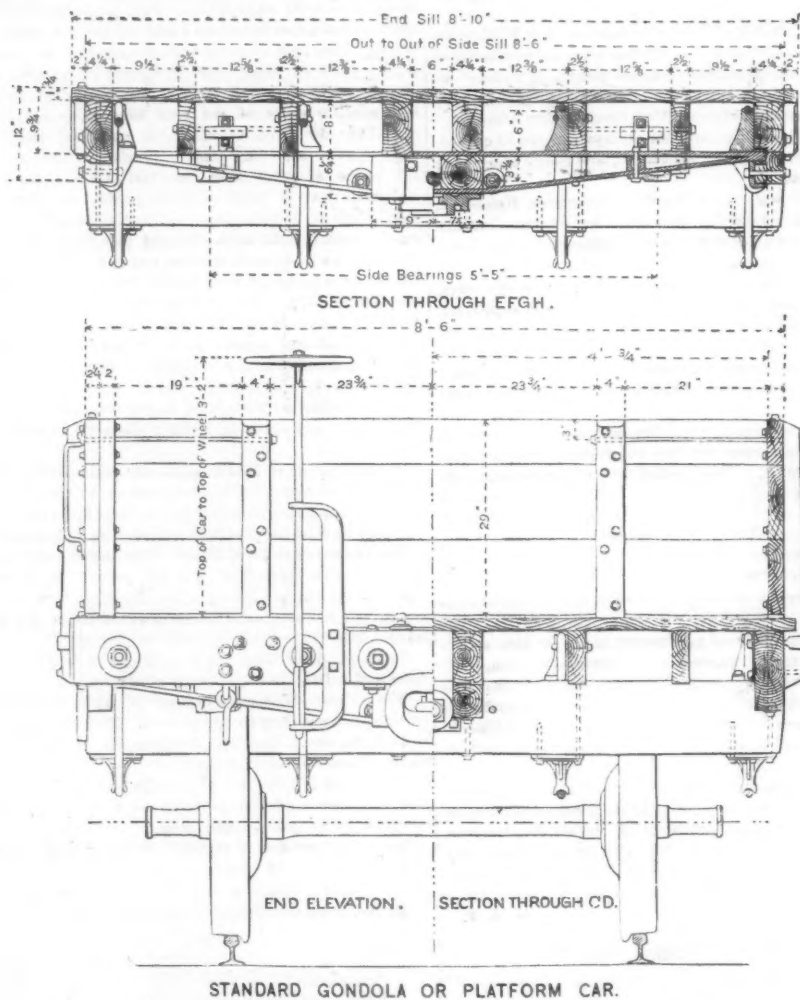
The officials of many corporations are engaged in promoting this work. There are serving on railroad committees of Young Men's Christian associations a very considerable number of the most prominent officials. One Chicago committee alone consists of 11 railroad presidents, vice-presidents, general managers and general superintendents. The work, as above said, is most heartily carried on in the West, where Amasa Stone, of Cleveland; J. H. D. Vereux, of the same city, and President of the Cleveland, Columbus, Cincinnati & Indianapolis and two other roads; President Eells, of the Ohio Central, and President Greene, of the Columbus, Hocking Valley & Toledo, are among its warm supporters. The New York Central & Hudson River authorities are likewise active, as apparently no other Eastern railroad magnates are, in helping on the work. They have had a reading room and library in the Grand Central depot in New York for seven years, and there are 11 railroad branches of the Young Men's Christian Association, with 15 secretaries and assistants, giving their whole time to the work along the line of the road. In all these cases the railroad companies help in furnishing and sustaining reading-rooms, in erecting buildings where it is necessary and in assisting in the running expenses. The officials all are particular to say that the thing pays. Some of them, like President Devereux, reason it out; others have to speak of moral and spiritual welfare and cordial and kindly relations between employers and employed, but all agree with General Manager Ledyard of the Michigan Central that, "leaving out

in Alabama; Memphis & Charleston, Savannah & Albany, New Orleans to the state line, and the Iron Mountain, in Arkansas. The lands revert to the public domain, subject to sale and settlement.

Mr. Pound, from the Committee on Public Lands, reported a resolution calling on the Secretary of the Interior for all the facts in his department tending to show the truth or falsity of the allegation of J. W. L. Baines that certain land grant railroads had received certificates for lands in excess of the amount due them under the acts granting the lands. Adopted.

In the Senate on the 7th: Mr. Jonas, from the Committee on Railroads, reported back with a written report the petition of citizens of Louisiana for the forfeiture of the land grant to the New Orleans, Baton Rouge & Vicksburg Railroad. In reply to an inquiry by Mr. Cameron, Mr. Jonas stated that the Committee saw no reason for a forfeiture of the grant, as the proposed road had been built by another company, the assignee of the original grantee, which had power to make such assignment. Upon his motion the Committee was discharged from consideration of the subject.

Mr. Blair offered a resolution calling for a statement of the amounts of public lands embraced in land grants to the following railroads, with the amounts certified and patented, on account of said grants, etc., as shown by the Land Department records: Sioux City & St. Paul; St. Paul & Pacific, First Division; Winona & St. Peter; Cedar Rapids & Missouri; Mobile & Girard; Pensacola & Georgia. The resolution went over without action.



New York Central & Hudson River Railroad and its Connecting Lines.

all other questions, it is a paying investment for a railroad company.

For the success of this admirable work nothing else can be half so influential as these certificates of the men who control these mighty machines of civilization, that it is really effective. Unlike too many church enterprises, this one is not founded on cant and sentiment, but on a serious consideration of needs, and it is carried out on sound business principles.—*Springfield (Mass.) Republican, May 28.*

#### Transportation in Congress.

In the House on the 6th: Mr. Reed, from the Judiciary Committee, submitted a report, which was laid on the table, upon the land grants to the Northern Pacific Railroad Company and the legal rights of that corporation in relation to such grants since its failure to fulfil the conditions of the granting acts. While admitting that that company failed to complete its road in 1876 and even in 1879, to which date the time was extended, and that even at the present day there remain 600 miles of the road to be completed, the report holds that "the sole right which remains in the United States at the present time is the right by its Congress to do any and all acts which may be needful and necessary to insure the completion of the road." The report then goes on to say that the United States do not want the lands back, but the question for consideration is what is needful and necessary to insure the completion of the road. The company say they will have the road finished by September, 1883, and therefore that it would not be advisable, in order to secure the completion of the road, either to give the land grants to another company or to sell them and apply the proceeds to the completion of the road, and that the completion of the road will be more readily secured by a policy of non-interference, and the report recommends that no further legislation is necessary or advisable.

Another report was also submitted to the House advising the forfeiture of lands granted to railroads in the Southern states upon which no work has been done. A bill accompanies this report which declares forfeited the lands granted to the following railroad companies: Ellyton & Beaver Bluff,

#### The New York Railroad Commission Bill.

We have before us a copy of the Railroad Commission Bill, which is now in the Governor's hands, and on which a hearing is to be had next week. The Board is to consist of three "competent persons," to be appointed by the Governor, with the advice and consent of the Senate. They are to receive a salary of \$8,000 apiece, and the term of office is fixed at five years; though in the case of the first appointments they would hold respectively for three, four and five years, so that a vacancy would occur every year. The Governor is to appoint within ten days after the third of January, 1883, and the method of selection prescribed is as follows:

"One of said persons shall be selected from the party which shall cast at the next general election the greatest number of votes for Governor of the state, and one of said persons shall be selected from the party which shall cast at the next general election the next greatest number of votes for Governor of the state, one of whom shall be experienced in railroad business; and one of said persons shall be selected upon the recommendation of the presidents and executive committees, or a majority of such, of the Chamber of Commerce of the state of New York, the New York Board of Trade and Transportation, and the National Anti-Monopoly League of New York, as said organization now exists, or any two of such organizations so represented, in case of disagreement."

The bill contains a further provision that "no person in the employ of, or holding any official relation to, any railroad corporation, or owning stock or bonds in any railroad corporation, or who is in any manner pecuniarily interested in any firm or corporation having business relations with any other railroad corporation," shall hold office as Commissioner. "nor shall any of said Commissioners be engaged in any other business vocation."

The provisions for making the Board "non-partisan" and for obtaining the advice of commercial bodies appear to have been hastily inserted in the bill at the last moment, for they are only made to apply to the original appointments. Vacancies occurring "after such appointment first made" would be filled by the Governor "by and with the advice and consent of the Senate," without any direction as to



the method of selection. Any Commissioner may be suspended by the Governor upon "charges" preferred against him; but he must report the case to the Senate at its next session, when a majority vote will be required to effect a removal.

The Board is to have "the general supervision of all railroads and railways" in the state, and for this purpose is given full powers of investigation and examination. It is directed to inquire into the causes of all accidents which it may think call for investigation, and to keep itself informed as to the "condition" of the roads and "the manner in which they are operated with reference to the security and accommodation of the public and the compliance of the several corporations with the provisions of their charters and the laws of the state." Hearings before the Commissioners are to be judicial in character, notice to corporations and parties interested being required in all cases. The Commissioners have power to subpoena witnesses, administer oaths and inspect books. By Section 5, whenever it appears to the Commissioners that any corporation has "violated any constitutional provision or law," neglected to comply with the terms of its charter, "unjustly discriminates in its charges for services," or "refuses to comply" with any law or any recommendation of the Commissioners, the Board may report the case to the Attorney-General, who "shall take such proceedings thereon as may be necessary for the protection of the public interests." By Section 8 these provisions are extended to all cases in which the Commissioners determine that repairs are necessary, that rolling stock is needed, or a change in rates for freight or passengers is reasonable and expedient.

Companies are required to furnish the Board with any information as to their management and operation required by it, and with copies of all contracts or agreements entered into by them, but the Board is given a discretion as to making such information public. Any refusal to furnish such information, and any willful obstruction of the Commissioners in the discharge of their duties, is made a misdemeanor. By Sections 9 and 10 the Commissioners are required to make an annual report, and to prescribe the form of report annually made by the railroads.

The total annual expenses of the Board, not to exceed \$50,000 (office rent excepted), are to be borne by the railroad companies "according to their means," the assessment to be apportioned by the Comptroller and State Assessor.

The main features of the bill are taken from the English and Massachusetts acts, and so far as they are intended to secure complete publicity with regard to all railroad affairs, and insure a prompt inquiry and report upon railroad abuses, and to set in motion the legal machinery of the state to meet them, they are excellent. If the Governor can find three "competent" men who have no pecuniary interest of any kind in any railroad, or any railroad security, and will take the position, a commission appointed under this act may do a great deal of valuable work. The provision, however, will make the work of selection very difficult. For a judicial office of this kind, the only sure guarantee against sinister influence that we can have is in the high character of the men appointed.—*New York Evening Post*, June 7.

#### THE SCRAP HEAP.

##### Locomotive Building.

The Rogers Locomotive Works in Paterson, N. J., have recently delivered several engines to the New York, Susquehanna & Western road. They are also turning out 12 engines for the Columbus, Hocking Valley & Toledo road.

The Atchison, Topeka & Santa Fe shops at Topeka, Kan., have just completed a new and heavy passenger engine, with 18 by 28-in. cylinders and 60-in. drivers.

The Baldwin Locomotive Works in Philadelphia have begun to deliver an order of 60 locomotives for the Philadelphia & Reading road.

The Delaware Locomotive Co., of Wilmington, Del., is reported to have a capital of \$300,000, and has purchased 20 acres of land in South Wilmington as a site for its works.

The Brooks Locomotive Works at Dunkirk, N. Y., are delivering to the Rochester & Pittsburgh road several consolidation engines with 17 by 28 in. cylinders and 44-in. drivers. They have straight-top boilers, entirely of steel, and weigh 42 tons. The tenders carry 3,000 gallons of water.

##### Car Notes.

The Pardee Car & Machine Works at Watertown, Pa., are now building one of the largest, if not the very largest, derrick cars in the country. It is built entirely of iron and is for the New York, West Shore & Buffalo road. It is rigged either for hand or steam power and is capable of lifting the heaviest cars in use.

The Fargo Car Wheel & Iron Works at Fargo, Dak., will soon be ready to begin work, and have already a number of orders on hand.

The Atchison, Topeka & Santa Fe shops in Topeka, Kan., have lately turned out a complete train, consisting of postal, baggage and several passenger cars.

The Jackson & Sharp Co. in Wilmington, Del., have lately completed several cars for the Wagner Sleeping Car Co. The East Tennessee, Virginia & Georgia shops at Knoxville, Tenn., are building a new director's car for the road; also two cars which will carry Blake crushers for breaking up stone for ballast.

Bowers, Dure & Co., in Wilmington, Del., are building a number of passenger cars for the Manhattan Elevated road in New York.

##### Bridge Notes.

The Cleveland Bridge & Car Works, of Cleveland, O., have just completed an iron highway bridge at Long Branch, N. J., 250 ft. long and 60 ft. width of roadway, with two 6-ft. sidewalks. The foundation is on iron screw piles.

The King Iron Bridge Co., at Cleveland, O., has the contract for several bridges on the Chicago & Atlantic road.

The Louisville Bridge & Iron Co. has just completed two iron highway bridges in Nashville, Tenn., and is building another in the same city.

The Wrought Iron Bridge Co., of Canton, O., has completed an iron highway bridge on Plymouth avenue in Minneapolis, Minn. It has three spans.

The Kansas City Bridge & Iron Co. has been organized at Kansas City, Mo., to make bridges and iron castings. Mr. George H. Wheelock is President. The company has two acres of land and has begun to build its foundry.

##### Iron and Manufacturing Notes.

The Alice Furnace Co. at Birmingham, Ala., has issued \$300,000 bonds, secured by a first mortgage on the property. The proceeds are to be used to build an additional furnace.

The Pacific Iron & Nail Co. has been organized to build a rolling mill and nail works in or near San Francisco.

The Briar Hill Iron & Coal Co. has a furnace near Youngstown, O., running on spiegel; it is making 30 tons a day.

The Crane Iron Co. has blown out for repairs its No. 4

furnace at Catsaqua, Pa., and now has three stacks in blast.

A company has been organized to build a large rolling mill at Canonsburg, Pa.

The Pottstown Iron Co. has blown out its furnace at Bechtelsville, Pa.; it has been making 240 tons a week.

The Cooper Iron & Mining Co. at Chester, N. J., has been making extensive improvements in its property. The company can now raise 5,000 tons a month of Bessemer ore.

The Chattanooga (Tenn.) Foundry & Pipe Works have a number of orders on hand.

##### The Rail Market.

No change in steel rails is reported, and quotations continue at \$47.50 to \$50 per ton at mill, according to time of delivery. Light rails are quoted \$52 to \$53.

Some business is reported in iron rails. Quotations are \$44.50 to \$45 for heavy sections and \$46 to \$48.50 for light rails, but some 56 lbs. rails are said to have been taken at \$43.50.

Spikes are still quoted at \$3 per 100 lbs.; fish-plates at \$2.60, and track-bolts at \$3.70 for square nuts and \$3.90 to \$4 for hexagon.

Old iron rails are a little stronger, and sales have been made at \$27 per ton in Philadelphia for tees.

##### The Iron Strike.

The great strike among the iron workers on June 1 was almost universal in Pittsburgh and from there West. In Pittsburgh only one rolling mill continues at work. In the Mahoning Valley, in Cincinnati, in St. Louis and in the Chicago District only a very few of the mills have agreed to the demands of the men and continue at work on the new scale of wages. These mills are generally small concerns or have pressing contracts to fill. In Cleveland, the Cleveland Rolling Mill Company has made an effort to start up with non-union men, but has thus far been able to get only enough to run a small part of the mill. Both the workmen and the mill-owners seem determined not to give way, and the prospect is for a long strike.

There is, apparently, no immediate danger of a scarcity of iron. Stocks are generally large, and the orders were pressing only in a few special cases. The market has been a falling one for some weeks, and the time seems very unfavorable for the strikers. In fact, many mill owners are not averse to a stoppage for a few weeks, and very few will be seriously embarrassed thereby.

A dispatch from Pittsburgh, June 7, says: "The Western Iron Association assembled in this city at 10 o'clock this morning, and with only short intermissions at noon and 6 o'clock was in session up to 11 o'clock to-night. The attendance was very large, including representatives from Cincinnati, Chicago, Cleveland, St. Louis, Wheeling and the Mahoning and Shenango Valleys and other Western points. The object of the meeting was to secure a firmer organization, in order that the demands of the Amalgamated Association might be resisted. Heretofore the labor organization has had the advantage in every strike because of the organization working as one man, while among the manufacturers there has been no concerted action. The session was held with the strictest secrecy, not a shred of information being obtainable all day. At the close of the meeting, however, the Secretary admitted that an organization to resist the demands of the Amalgamated Association had been formed, and that the action taken at the last meeting, which was not so fully attended, declaring against any advance on the present scale, had been reaffirmed unanimously. Further than this no information could be obtained from the Secretary, but it is positively known that a most critical and protracted discussion took place on the situation, and that the breaks at Wheeling and other points were matters of great solicitude. During the debate it was developed that most of the manufacturers preferred the present policy of inaction and starving out the men, while others present preferred even a more aggressive policy. Some of the manufacturers are said to have been so indignant at the demands of the Amalgamated Association that they proposed the manufacturers should insist on a reduction of the present scale and fight it out to the bitter end. They thought, with such a compact organization as was effected to day, they would pursue such a course with every prospect of victory. The division among the manufacturers at first, which caused the long session and protracted discussion, grew out of the fact that there are three classes of manufacturers—the first produce nails, the second specialties, and the third bar iron. Owing to the great demand for nails, the first named were somewhat disposed to sign; the second class, who are always rushed with orders for specialties, could not afford to remain idle for an indefinite period, and the third class, who were in the majority, have everything to win and nothing to lose, and for this reason they are determined to resist the demands at all hazards. Notwithstanding this decision a somewhat compact organization was effected and the action of the last meeting was reaffirmed. How long the situation can remain thus time only can tell.

##### Trainmen and Passengers.

There are lessons for Springfield coming out of the railroad conference just closed, lessons for individuals as well as for the churches. One of them is that it will pay all of us well to treat every railroad man with courtesy. We show the worst side of human nature on the train, as any of the trainmen could readily prove to us. Said a conductor of an honored citizen: "I have my opinion of that man: he is on my train a great deal and he always keeps a whole seat to himself; no matter how crowded the car his valise is kept beside him, so that there may be no intruders." It was a River road passenger brakeman who, having taken another employment for a time, and accepted service on a freight train, after refusing the offer of his old place, was asked why he preferred the greater risks and harder work of his new position. He said: "I will tell you why. A passenger brakeman does not expect to be regarded by the public as a gentleman. But he does expect that they will accord to him the rights due to a man, and give him the credit of a man's feelings. But in this respect I have been mistaken. The public have treated me like a dog. They have snapped their fingers at me and even whistled to me when they wanted some errand done. I have felt at times compelled to suggest to them that I am not a dog. No. I will not go back. I have some little independence left, and can be reasonably happy on a freight train." Words like these are worth remembering at this time, when the attention of the local public is being especially directed to railroad men.—*Springfield (Mass.) Republican*.

##### Nearly Even.

In the case of the Boston & Albany Railroad against Mr. Albert F. Upton of Newtonville, to recover a cash fare of 23 cents, which, having accidentally left his coupon ticket-book at home, he refused to pay, and in the case of Mr. Upton against the railroad company, to recover 24 cents, the value of three coupons, accidentally detached by the conductor from the ticket-book, and which Mr. Upton refused to take back because they are marked "not good if detached," the Court has found, in each case, for the plaintiff, so that Mr. Upton has the best of it by one cent.

##### In the Smoking Car.

It was in the smoking car on the New York Central. There was one chap who was blustering a great deal and telling how many duels he had fought, and behind him sat a small man reading a magazine.

"Sir!" said the big man, as he wheeled around, "what would you do if challenged?"

"Refuse," was the quiet reply.

"Ah! I thought as much. Refuse and be branded as a coward! What if a gentleman offered you the choice of a duel or a public horse-whipping—then what?"

"I'd take the whipping."

"Ah! I thought so; thought so from the looks of you. Suppose, sir, you had foully slandered me?"

"I never slander."

"Then, sir, suppose I had coolly and deliberately insulted you. What would you do?"

"I'd rise up this way, put down my book this way, and reach over like this and take him by the nose as I take you, and give it a three-quarter twist—just so!"

When the little man let go of the big man's nose, the man with the white hat on began to crouch down to get away from bullets, but there was no shooting. The big man turned red, then pale, then looked the little man over and remarked:

"Certainly—of course—that's it exactly!"

And then the conversation turned on the general prosperity of the country.—*Detroit Free Press*.

##### Ornamenting Station Grounds.

The Philadelphia & Reading is following the example of the Pennsylvania Railroad Company in beautifying the grounds of the various stations along the main line and branches. Wherever new depots have been erected the grounds adjacent are being sodded and laid out with flower beds.

##### A Thrilling Accident.

"He was on the morning express," remarked the sad-looking passenger, "and was back in the rear coach. Just when they were climbing the grade near Richfield Junction, he started to go forward into the smoking car. As he stepped across the platform the train suddenly broke in two. In less time than it takes to tell it, the rear car started to run back down the grade, and the forward part of the train went howling on to Utica. The young man, standing with a foot on each car, was torn in two. One-half of him went to Utica, the other half went back with the wild car to Binghamton. The half of him on the smoking car had his ticket and watch, so that section got through without any trouble. But the other half had his pocket book and no ticket. It had to pay local fare all the way back to Binghamton, although its way was paid clear to Utica; but the company refused to allow that on his return passage, nor would it permit him to ride half-fare. It is just that unreasonable sort of company. And then he was going up to Utica to be married, but the half that went back to Binghamton got awfully mashed on a Coventry girl and married her, but before he could get word to the other half of him, it had gone on and married his old Utica first love, she accepting what there was of him for better or worse. Then he was afraid to come together, you see, for fear he would be arrested on a charge of contributory bigamy, and in dividing up his property so that the two families might live separately he quarreled with himself, accusing each other of trying to get the biggest half, and at last he sued himself and went to law about it. But when the matter was decided, of course he had to pay the lawyers on both sides. This drove him to financial ruin. Then he tried to commit suicide, but every time one side of him took poison, the other side took an antidote, or went howling after a doctor and a stomach pump, and when the Binghamton fellow tried to shoot himself the Utica half dodged and spoiled the shot. And so he dragged out a miserable, lingering existence, and didn't more than half enjoy life."

"Did he ever come together?" asked the tall, thin passenger.

"No," the sad passenger said, "he was unreconciled to the end. To both ends, in fact. Finally, one of him started a daily paper to fill a long felt want, and the other half taught a private school in Amsterdam, and they starved each other to death in six weeks.—*Burlington Hawkeye*.

##### Dying on His Engine.

Engineer James Seeley, of this village, died very suddenly this morning at Otisville. He started away from Port Jervis on extra 36, at 6.20 this morning, with his locomotive, No. 617. When near Guyard he complained to his fireman, Wm. Hector, that he was ill, and requested him to take charge of the engine. He had scarcely made this request when he fell over in the tank, unconscious. The fireman ran the engine until it was about a mile west of Otisville, but as the engineer did not recover, he stopped the engine and made known the state of affairs to the conductor, Milton Dorr. The engine was detached and run to Otisville, and the unconscious engineer was taken to the depot. Dr. Cook was called, but at 7.55 Mr. Seeley died, not having recovered consciousness at all. It is thought that death was caused by apoplexy. The body was placed on a freight train bound for Port Jervis, and was soon brought here and taken to the residence of Hammond street.—*Port Jervis (N. Y.) Gazette*, June 6.

##### Electric Railroads.

Some Philadelphia capitalists have made a proposition to build an electric railroad in Fairmount Park, and have petitioned for the necessary permission. They are represented by Ex-Gov. Hartranft, and the Park Commissioners have taken the matter under consideration.

##### Fraudulent Train-Wreckers.

It is now believed that the attempted train-wrecking on the New York, New Haven & Hartford road, reported recently to be a fraud, and that the station agent, who claimed to be the discoverer of the obstructions, placed them himself, his object being probably to secure credit for his vigilance and courage. The matter is under investigation.

A similar case is reported last week on the same road, where a track-watchman found obstructions near Meriden, Conn., and signalled a train. It is believed that he also contrived the whole affair himself, and this case is being strictly investigated.

##### An Expensive Road.

Mr. Edward G. Tilton, of Yale, B. C., contractor's Chief Engineer and General Superintendent of the Canadian Pacific Railway, arrived in the city a few days ago. In answer to the request of the *Oregonian* representative, Mr. Tilton gave the following information concerning the Western Division of the colossal enterprise undertaken by the Canadian government. Last February a contract for building 85 miles from Emory (a point five miles below Yale) to Port Moody, the western terminus at the head of Burrard's Inlet, was let to Mr. Andrew Onderdonk and associates, and the work of clearing and bridging is already under way. Grading will begin about the 25th of this month. Arrangements have been made for the importation of 8,000 Chinese to arrive within 60 days. Two vessels with 1,200 coolies arrived last month and the men are now at work. Five



thousand men will be put on the line between Emory and Port Moody and a like number on the Fraser River.

The work thus far on the Fraser River has resulted in the completion of 23 miles of track, under the contract secured in 1880, northeast from Emory. Above these 23 miles 1,200 men have been at work for 18 months, and the grade from the 60th to the 90th mile is nearly completed. The work from Emory to Thompson's River, a distance of 60 miles, is probably the most difficult and expensive on the North American continent. Fraser River is bordered with steep, rugged mountains of solid granite from 6,000 to 8,000 ft. high. In the first 17 miles there are 13 tunnels—4 in one mile and 6 in another 2 miles. Mr. Onderdonk's contracts include, in addition to the new one above mentioned, the line from Emory to Kamloops Lake, a distance of 127 miles, which was originally divided into four contracts. The total number of tunnels is 27 and the longest is 1,500 ft. Six tunnel drills, operated by compressed air, were used at each end, and 6 ft. advance was made every 24 hours. On the division above Emory there are no less than 600 trestles and bridges, and in the last 85 miles more than 100. The embankments at formation level are 17 ft. wide and cuts 22 ft. Tunnels are 22 ft. wide and 21 ft. high. None other than 55-pound steel rails are used.

In the upper section of the work there are 10,000,000 cubic yards of earth excavation, 3,000,000 cubic yards of rock, exclusive of tunnels, and 2,000,000 cubic yards of loose rock and cemented gravel excavation. Between 30,000,000 and 40,000,000 feet of timber, board measure, are required for structures over the entire contract. The rock is of the hardest, compact granite, in which often occur wide and extremely hard quartz veins. For miles the road is literally hewn out of the sides of cliffs. The approaches to many of the tunnels are galled, i. e., the cliffs are left overhanging the roadway, unsupported by any outer wall. At the eastern approach to tunnel No. 7 for over 100 ft., the bluff is galled and overhangs the roadway 24 ft. in width or two ft. outside the roadbed, below which is an almost perpendicular precipice of 200 ft. The Fraser rises in many places 100 ft. At Hell-Gate, which closely resembles the Dalles of the Columbia, the river is but 120 ft. wide. The first tunnel is at the north end of Yale, and the first four happen within a mile and a half of the town. It required 18 months to build the first two miles, working tunnels night and day. From one point, six tunnels are visible at a glance. Grades and curves are moderate, the heaviest grade being 50 ft. to the mile. The company has constructed a pack trail along 10 miles of the line at a cost of \$6,000. Transportation by other means than the backs of men and mules over this distance was impossible. Although several hundred tons of powder have been used, few lives were lost. Deaths from violence numbered 22. The health of the men is now excellent.

To carry on the work, required the investment of \$750,000 on the plant alone. For massiveness and grandeur the scenery is unrivaled in North America, and the cloud effects are beautiful beyond comparison.

The line follows west bank of the Fraser to a point 8 miles below Lytton, where Thompson River empties into the Fraser. Here the latter river will be crossed by an iron and steel bridge to cost \$300,000. The line will then follow the south bank of the Thompson to Kamloops Lake. The contractors expect to have completed, by the end of this year, 120 miles of grade, and have 50 miles of track in operation. The first two miles north from Emory cost a trifle over \$200,000 per mile, and 11 miles from the 18th to the 29th cost \$175,000 per mile. The average cost per mile of the upper division (along Fraser and Thompson rivers) will be over \$75,000 per mile. This does not include the cost of rails and fastenings, which are furnished by the government. The 212 miles from Port Moody to Kamloops Lake will cost exclusive of rails, \$12,000,000. The company have at Yale their own nitro-glycerine and powder works, with a capacity of 4,000 lbs. per day, car and machine shops and all supply departments. They have employed since the beginning of the work from 3,000 to 3,500 men. A considerable portion of their supplies are landed from ocean craft at New Westminster, and conveyed by steamers 90 miles to Emory, the base of operations, where the company have an incline to the steamboat landing. A steamer is under construction and will be launched in a few days, for navigation of the upper Fraser between Boston Bar and the mouth of Thompson River. Capt. Nat Lane will be in command. The boat is intended for transportation of supplies, and will be the first to ascend above Boston Bar. Mr. Tilton has brought over some excellent photographs of scenery along the Fraser, showing besides the very difficult character of the work, the progressive stages of the road.—Portland Oregonian, May 5.

#### ANNUAL REPORTS.

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#### Northern (New Hampshire).

This company owns a line from Concord, N. H., north-west to White River Junction, Vt., 69.5 miles, with a branch from Franklin, N. H., to Bristol, 13.5 miles, making 83 miles in all. The report is for the year ending March 31.

The equipment consists of 23 engines; 13 passenger, 1 mail, 2 mail and smoking and 7 baggage cars; 413 freight cars and 18 gravel cars.

The balance sheet is as follows:

Stock.....	\$3,068,400.00
Income.....	150,820.45
Contingent fund.....	1,176,143.99
Bills payable.....	177,000.00
Bond due April 1, 1874.....	100.00
Coupons and dividends unclaimed.....	8,713.28
June dividend.....	89,919.00
Total.....	\$4,670,096.70
Construction.....	\$3,068,400.00
Materials.....	109,915.69
Improvement account.....	80,000.00
Northern R. R. stock, 711 shares.....	37,708.34
Cash.....	59,831.04
Superintendent's department.....	9,326.41
Bills receivable.....	1,030,667.50
Concord & Claremont R. R.....	254,215.72
Total.....	4,670,096.70

The company has no funded debt, its liabilities consisting of the \$177,000 coupon notes. It guarantees \$299,500 bonds of the Concord & Claremont Company, in addition to \$200,500 of the same bonds which it owns. The company also buys the coupons (\$6,500 yearly) on \$100,000 bonds of the Peterboro & Hillsboro road.

The traffic for the year was as follows:

Train miles:	1881-82.	1880-81.	Increase.	P. c.
Passenger.....	195,088	190,938	4,150	2.2
Freight.....	286,840	284,014	2,826	1.0
Other.....	3,991	3,295	696	1.8
Total.....	485,929	478,247	7,682	1.6
Passenger miles.....	189,872	181,355	8,517	25.5
Passenger miles.....	7,612,328	5,944,082	1,668,246	28.1
Tons freight carried.....	498,233	466,266	31,967	6.9
Ton miles.....	30,775,862	29,381,572	1,394,290	4.7
Av. train load:				
Passengers, No.....	39.04	31.14	7.90	25.5
Freight, tons.....	107.31	103.46	3.85	3.7

Of the passenger miles 64.7 per cent. and of the ton miles 94.7 per cent. were of business to and from other roads. There was a decrease in the through Western business.

The earnings for the year were as follows:

	1881-82.	1880-81.	Increase.	P. c.
Freight.....	\$329,059	\$323,091	\$5,968	1.8
Passengers.....	173,824	152,338	21,486	14.2
Mail, etc.....	25,521	24,588	933	3.8
Total.....	\$528,404	\$500,017	\$28,387	5.7
Expenses.....	405,075	397,794	7,281	2.0
Net earnings.....	\$123,329	\$102,223	\$21,106	20.1
Gross car. per mile.....	6.00	6.024	342	5.7
Net car. per mile.....	1.478	1.39	248	20.1
Per cent. of expenses.....	76.77	79.56		

Rates on through freight business were extremely low, but an improvement is now expected.

During the year 2,635 tons of steel rails and 42,355 new ties were laid. This completes the laying of the main line with steel. A part of the cost is charged each year to expenses, until the whole amount is paid off. Two new bridges were built.

One engine and 42 freight cars were rebuilt in the shops. The equipment is now in good order.

The expenses last year include \$9,456.05 for state tax, and \$25,008.42 for new rails account.

The income account was as follows:

Net earnings.....	\$122,729.07
Credit balance interest account.....	48,720.69
Premium on Concord & Claremont bonds.....	14,474.81
Total.....	\$185,924.57
Dividends, 6 per cent.....	179,838.00
Surplus for the year.....	\$6,086.57
Balance, April 1, 1881.....	144,733.88
Balance, April 1, 1882.....	\$150,820.45

Relations with connecting roads continue friendly. A new contract has been made with the Central Vermont Company, which will settle the differences heretofore existing. The contracts with the roads south of Concord expired last year and negotiations for new agreements are now pending.

Suits are still pending against the company for an amount claimed to be due the Ogdensburg & Lake Champlain road under the old line contract. The old claim of the receivers and managers of the Vermont Central and the Vermont & Canada roads is now being examined.

The Manchester & Keene road is now being regularly worked, and will, it is expected, bring some additional business to the Peterboro & Hillsboro road, increasing the earnings of that road, in which the Northern is part owner.

The New Hampshire Legislature having authorized the consolidation with this company of the Concord & Claremont (which it largely owns) the directors recommend that the consolidation be carried out.

The road and equipment are now in good condition, the main line being entirely laid with steel rails.

#### Denver & Rio Grande.

At the beginning of the year 1881 this company had 755.70 miles of road; during the year 380.75 miles were added by new construction, and the mileage was reduced 1.40 miles by straightening the line at several points, leaving 1,065.25 miles at the close of the year, as follows:

	Miles.
Denver to Pueblo.....	119.60
Pueblo to Canon City.....	40.60
Florence to Coal Creek.....	2.60
Pueblo to Alamosa.....	130.50
Cuchara to El Moro mines.....	43.70
Castle Rock to Douglass quarries.....	49.90
Colorado Springs to Manitou.....	5.30
Oak and Chandler Creek mines.....	2.50
Canon City to Westcliffe.....	31.50
Placer Iron mine.....	2.10
Canon City to Leadville.....	118.00
Becla to Calumet.....	6.85
Leadville to Wheeler.....	24.20
Alamosa to Durango.....	200.40
Durango to Rockwood.....	19.10
Salida to Gunnison.....	74.20
Poncha to Maysville.....	6.90
Mears to Hot Spring Iron Mine.....	27.60
Gunnison to Crested Butte.....	29.40
Malta to Rock Creek.....	30.40
Leadville Smelters.....	7.00
Antonito to Espanola.....	91.70
Alamosa to South Fork.....	46.20
Total.....	1,065.25

Additional lines under construction are noted elsewhere in the report.

The equipment consists of 170 engines; 136 passenger-train cars; 4,451 freight cars and 53 service cars. The in-

crease during the year was 69 engines; 45 passenger-train cars; 1,793 freight cars and 4 service cars.

The general account, condensed, is as follows:

Stock.....	\$24,160,000.00
Bonded debt.....	23,091,000.00
Rolling stock certificates.....	3,051,000.00
Unclaimed dividends, January dividend.....	450,075.25
Subscriptions paid on securities not yet delivered.....	190,476.24
Vouchers and pay-rolls.....	1,601,761.65
Unclaimed wages.....	27,918.75
Bills payable.....	441,975.39
Open accounts.....	1,588,120.21
Profit and loss.....	396,469.53
Total.....	\$55,007,497.02
Construction and equipment.....	\$50,949,437.18
Material on hand.....	2,213,954.72
Securities on hand.....	800,700.00
Cash and accounts receivable.....	1,043,405.12
Total.....	55,007,497.02

Since the close of the year the floating debt has been largely taken up with the proceeds of \$5,000,000 new stock and \$1,000,000 bonds, which do not appear on the accounts of 1881.

The bonded debt consists of \$6,382,500 old first-mortgage bonds, \$16,685 consolidated bonds, and \$23,500 fractional bond certificates.

The earnings for the year were as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Freight.....	\$4,332,150	\$2,411,457	\$1,920,693	79.6
Passengers.....	1,543,031	945,031	598,000	63.5
Mail, etc.....	349,012	122,506	226,506	184.9
Total.....	\$6,224,193	\$3,478,994	\$2,745,199	79.5
Expenses.....	3,620,030	1,865,780	1,754,250	104.8
Net earnings.....	\$2,604,163	\$1,613,214	\$990,949	62.7
Gross earn. per mile.....	7.045	7.340	I. 605	8.3
Net ".....	3.339	3.403	D. 64	1.9
Per cent. of expenses.....	57.97	52.80	I. 5.17	

Of the gross earnings there were \$226,320.23 derived from freight on construction material, and \$232,343.97 from government business, including mails.

The increase in business was very large, as will be seen, being even more than that due to the increased mileage.

The income and profit and loss accounts were as follows, condensed:

Net earnings.....	\$2,604,163.87
Interest on bonds.....	\$991,025.00
" certificates.....	7,904.91
" rolling stock trusts.....	200,611.61
Taxes and insurance.....	169,437.79
Dividends.....	914,100.00
Total.....	2,283,079.31

Surplus for the year.....	\$341,085.56
Balance Dec. 31, 1880.....	258,698.55
Charge erroneously made.....	19,380.42
Total.....	\$619,734.53
Interest not previously charged.....	223,265.00
Profit and loss balance.....	\$396,469.53

Interest is charged only on the amount of bonds issued on the average mileage of the year, and dividends on an amount of stock computed in the same way. The actual amount of dividends paid was \$1,260,100.

The traffic for the year was as follows:

Train miles:	
Passenger.....	1,076,694
Freight.....	1,927,013
Service.....	928,951
Switching.....	841,253
Total.....	4,773,911
Cost of locomotive service per mile.....	19.25 cts.
Passengers carried.....	342,885
Passenger miles.....	28,115,740
Tons freight carried.....	1,136,311
Ton miles.....	118,770,309
Av. train load:	
Passengers, No.....	26.11
Freight, tons.....	62.15

The average passenger journey was 81.99 miles; average freight haul, 105.40 miles.

Leading items of freight were 264,981 tons of coal and coke; 120,027 tons ore and bullion; 66,343 tons lumber, and 370,391 tons railroad material.

The average freight rate in 1881 was 3.62 cents per ton per mile; the average passenger rate was 5.56 cents per passenger per mile, against 7.27 cents in 1880.

The report of the President says: "Nine and one-tenth miles of side track were put in at Denver and Burnham, South Pueblo and Bessemer (where the steel works of the Colorado Coal & Iron Co. are situated), making a total mileage at the end of the year 1881 of 1,066.65 miles of main track, and 110.46 miles of side track. A third rail of 40-pound steel was also laid between Denver and Pueblo (120 miles) for a standard-gauge track. In adding this rail the alignment has been much improved at various places, and at least every third narrow-gauge tie has been replaced by an 8-ft. standard-gauge tie. Extensive betterments have been made all along the line. All the lighter rails between Denver and Canon City have been replaced with 40-pound steel, thus making a continuous steel rail track from Denver to Leadville. The line between Pueblo and Canon City has been greatly improved, and the distance reduced seven-tenths of a mile. In all, the old line has been shortened by improvements 1.4 miles during the year. Eighteen miles of iron rails have been removed between Placer and Alamosa and relaid with steel. All the new extensions have been laid with steel, excepting the Wagon Wheel Gap line, upon which the best iron rails, selected from those taken up elsewhere, have been placed. Some iron has also been used on a few of the less important sections. Additional facilities have been furnished at Leadville. The track running from near the La Plata smelter up California Gulch to the Grant smelter and Meyer's sampling works has been extended up the gulch half a mile, thence back around Carbonate Hill, half a mile, to the Tabor Company's mill and Harrison reduction works, which additional mile is not included in the mileage above given. In all 7,233 linear ft. of snow sheds have been erected during the year, and many additional snow fences. The shops at Burnham, near Denver, have been greatly increased in size and efficiency during the year, and have turned out thirteen passenger and baggage and 1,406 freight cars of various kinds.

"The cost of the above work as well as additional outlays upon further extensions, betterments and improved facilities, required the issue of \$5,000,000 capital stock and \$1,000,000 consolidated bonds referred to in the circular dated Jan. 27, 1882. This issue of stock and bonds and the proceeds thereof do not enter into the accounts of the year 1881.

"Construction during the present year will be confined to the completion of the Silverton extension and the Utah connection. Track will, however, be laid this spring on the 14.5 miles remaining to complete the branch from Alamosa to Wagon Wheel Gap (60.7 miles), and on the 11.1 miles which will complete the Blue River Branch as far as Dillon, a point 35.6 miles distant from Leadville, or per-



hops to Breckenridge, nine miles farther. The grading is completed on both these branches.

"The line which runs from Malta, five miles below Leadville, northward over the Tennessee Pass to Red Cliff has been extended since the commencement of the year to Rock Creek, 3.4 miles, so as to furnish an outlet for the Belden and other mines at that point, which are producing large quantities of ore. This short extension, although expensive, was warranted by the tonnage secured thereby.

"Upon the extension from Durango to Silverton, track-laying was stopped for the winter at a point 19.1 miles north of Durango. Rock-work was continued all winter in the Animas Cañon, above this point. Track-laying has been recommenced, and the road will be completed to Silverton, 42 miles from Durango, in June. The grading force now employed consists of 309 men and 51 teams.

"Work on the Utah Extension has been continued systematically all winter, chiefly in the cañons of the Gunnison, where the character of the work (heavy rock) was adapted to the season. Track is now laid, April 1, to a point 12 miles beyond Gunnison City, where it better accommodates the Lake City trade.

"About May 15, it is expected that all arrangements will have been completed for rapid and uninterrupted track-laying westward. It is 171 miles from Gunnison City to the Utah boundary, and the remainder of this distance should be laid by Sept. 1. The steel rails are to be furnished by the Colorado Coal & Iron Co. from their Pueblo works. The winter has been mild and favorable, and the grading and bridging is so far advanced that no delay is anticipated therefrom. The grading forces now employed on this extension consist of 1,045 men and 175 teams.

From the Utah line to Salt Lake, 272 miles, the Denver & Rio Grande Western Company has work in progress.

#### Burlington, Cedar Rapids & Northern.

At the close of the year 1881, which is covered by the last report, this company worked the following lines:

	Miles.
Main line, Burlington, Ia., to Albert Lea, Minn.	252.0
Milwaukee Div., Linn, Ia., to Postville	94.0
Pacific Div., Vinton, Ia., to Holland	48.0
Muscatine Div., Muscatine, Ia., to Riverside	31.0
Iowa City Div., Elmira, Ia., to Montezuma	32.0
Iowa Falls Div., Holland, Ia., to Emmetsburg	113.0
Clinton Div., Clinton, Ia., to Noel	23.5
Total	644.5

The mileage was increased during the year by 58 miles on the Iowa Falls Division and by the Clinton Division, 81.5 miles altogether. One hundred miles are under the organizations of the Iowa City & Western and the Cedar Rapids, Iowa Falls & Northwestern companies, which are really owned by this company.

The track from Manly Junction to Northwood, 11 miles, is leased from the Central Iowa Railway, and is operated by this company. The track from the state line to Albert Lea, 12½ miles, is owned by the Minneapolis & St. Louis Railway Company, and is leased to this company for a term of 999 years. This company has perpetual lease for all lines built by the Iowa City & Western and Cedar Rapids, Iowa Falls and Northwestern railways, and has 66 miles unincumbered road.

The general account is as follows:

Stock	\$10,000,000
Bonds	9,050,000
Bills and accounts payable	365,881
Income account, balance	2,253,966
Total	\$21,678,847
Property accounts	\$16,388,468
Stock unissued	4,500,000
Materials	183,471
Interest	424,562
Accounts and balances	153,383
Cash	26,963
Total	\$21,678,847

Stock remains unchanged; the bonded debt was increased by \$1,000,000 during the year.

The traffic for the year was as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Passengers carried	439,508	319,033	I. 120,475	37.8
Passenger miles	14,876,355	11,323,119	I. 3,553,236	31.3
Tons freight carried	1,716,182	1,373,052	I. 343,130	25.0
Ton miles	127,904,018	110,244,007	I. 17,750,011	16.1
Av. rate:				
Per pass. mile	2.830 cts.	3.190 cts.	D. 0.360 ct.	11.3
Per ton mile	1.392 "	1.480 "	D. 0.088 "	6.0

The traffic shows a considerable increase, more, perhaps, than might have been expected under the circumstances of the past year. The rates generally were lower. The passenger rate is low for a Western road.

The earnings for the year were as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Freight	\$1,782,521	\$1,633,490	I. \$149,032	9.1
Passengers	422,014	382,160	I. 39,854	10.5
Mail, etc.	54,501	57,823	D. 3,322	5.8
Total	\$2,259,036	\$2,073,473	I. \$185,563	10.0
Expenses	1,626,850	1,313,725	I. 283,125	21.1
Net earnings	\$632,186	\$759,747	D. \$127,561	10.0
Gross earn. per mile	3.816	4.132	D. 0.316	7.7
Net	1.068	1.428	D. 0.360	25.2
Per cent. of exps.	72.02	65.44	I. 6.58	

Earnings were decreased and expenses increased by the very severe winter, which affected all the roads in the Northwest. This partly accounts for the high proportion of working expenses.

The income account for the year is as follows:

Net earnings, as above	\$632,186
Other receipts	59,196
Total	\$691,382
Interest on debt	\$424,562
Construction	111,431
Improvements of road	86,839
New equipment	280,459
Other expenditures	13,583
Total	\$916,874
Excess of payments	\$225,492

The President's report says: "While the business of the year ending Dec. 31, 1881, was larger than that of any previous corresponding period, the net results were not entirely satisfactory. The gross earnings are materially less, and operating expenses larger than was anticipated at the close of the business of the preceding year; this result, however, is attributable solely to causes beyond the control of the managers of the property. The blockades of the company's several lines of road by snow during the earlier periods of the year's business seriously affected the showing of net earnings, as \$59,535 was expended in relieving the road from those obstructions; while on the other hand, during a portion of this period, the business of several sections of the road was almost entirely suspended.

"The permanency and safe condition of the company's roadway—to accomplish which large expenditures were required—the large additions to the rolling stock, the enlargement of shop and station facilities, increase of sidings, etc., all of which have been paid for out of earnings, fully demonstrates the wisdom of the policy adopted by the company at

an early period of its existence, of applying surplus earnings, over and above payment of ordinary operating expenses and fixed charges to improvements; thereby avoiding any increase of bonded indebtedness and payment of additional fixed charges. The total bonded indebtedness at close of year was \$9,050,000, and the interest account \$475,880.

"The mileage of road operated at close of year, and upon which these bonds are placed, was 620; less 63 miles (including Clinton and Iowa City divisions) upon which no bonded indebtedness exists, viz.:

"A link of road from Traer to Holland on Pacific Division, 23 miles; from Plymouth Junction to Manly Junction on main line, 6; from Northwood to state line, 5; from Clinton to junction with Davenport & St. Paul, 23; from Elmira Station on main line to Iowa City, 9; total, 66 miles.

"The 23 miles of road from Clinton westward were completed late in the fall, and have not as yet been operated; but are expected to be by the opening of the summer's business.

"The company's new and leased lines are not at present remunerative, and were not expected to be for a time when first acquired."

#### Boston, Concord & Montreal.

This company owns a line from Concord, N. H., north by west to Woodsville (Wells River) and thence northeast to Groveton, 145 miles, with a branch from Wing Road to Fabvan and Mt. Washington, 22 miles, making 167 miles in all. Its report is for the year ending March 21.

The equipment consists of 23 engines; 26 passenger, 2 drawing room, 3 observation and 20 mail and baggage cars; 833 freight cars.

The balance sheet, condensed, is as follows:

Stock, preferred	\$800,000.00
" new	540,400.00
" old, dividends, etc.	459,600.00
Total stock	\$1,800,000.00
Bonds	3,053,600.00
Coupons and dividends unclaimed	15,805.80
Profit and loss	635,118.78
Total	\$5,508,612.67

Road and extensions	\$4,373,000.00
Improvement account	450,681.90
Trustees of sinking fund	201,500.00
Pemigewasset House	16,000.00
Materials, fuel, etc.	217,070.05
General Manager's account	49,298.33
Cash for coupons, etc.	15,805.89
Cash and bonds on hand	183,165.90

Of the bonds \$500,000 are due in 1911; \$1,931,400 in 1903; \$624,000 in 1899, and \$230 are long overdue, but never presented for payment. The bonded debt was increased by \$526,400, as explained below.

The traffic for the year was as follows:

	1881-82.	1880-81.	Increase.	P. c.
Train miles	422,587	412,753	9,834	2.4
Passenger	586,595	516,576	70,019	13.5
Freight	38,817	22,884	15,933	69.2
Other				
Total	1,047,999	952,213	95,786	10.1
Passenger miles	312,785	280,473	32,312	8.1
Passenger miles	10,190,083	9,286,820	903,263	9.7
Tons freight carried	345,744	285,537	60,147	21.1
Ton miles	20,744,648	17,135,830	3,608,818	21.1
Av. train load:				
Passengers, No.	24.11	22.50	1.61	7.2
Freight, tons	35.36	33.17	2.19	6.6

Of the passengers carried 36.7 per cent., and of the tons carried 89.7 per cent. were of business and from other roads.

The earnings of the year were as follows:

	1881-82.	1880-81.	Increase.	P. c.
Freight	\$532,619	\$454,184	\$78,435	17.3
Passengers	331,309	310,796	20,513	6.6
Mail, etc.	38,979	32,576	6,403	19.6
Total	\$902,907	\$797,556	\$105,351	13.2
Expenses	689,158	586,172	102,986	14.2
Net earnings	\$213,749	\$211,384	\$2,365	1.0
Gross earn. per mile	5.407	4.776	0.631	13.2
Net	1.400	1.266	0.134	10.6
Per cent. of expenses	74.11	73.50	0.61	

During the year 104,834 new ties were laid and 12,404 rails were taken up, repaired and relaid. There were 9½ miles of new sidings laid. Extensive repairs were made to the road-bed, bridges and buildings.

Extensive repairs were made to the equipment, and it is now in good condition. Two new engines were bought, and the company built during the year 1 baggage and smoking, 1 baggage and express and 2 express and mail cars; 50 box, 2 stock, 3 flat, 28 stake and 2 freight saloon cars. All these were charged to expenses.

The income account (condensed) was as follows:

Bonds and cash on hand from last report	\$171,970.80
Net earnings for the year	233,749.31
Consolidated bonds sold	26,400.00
Improvement bonds sold	500,000.00
Premium and interest on bonds sold	49,710.71
Total	\$981,830.82
Interest, etc.	\$193,860.57
Preferred stock dividends	40,866.00
Improvement account	450,681.90
Branch to Mount Washington	26,000.00
Materials, etc., increase	54,268.76
General Manager's cash, increase	17,091.80
Total	782,769.03
Balance, bonds and cash on hand	\$199,061.79

The directors' report says: "Sales of the consolidated bonds have been made to the amount of \$26,400, the proceeds of which, to the extent of \$26,000, have been applied to the payment of the cost of the branch to Mount Washington. The sinking-fund bonds remain in the same situation as at the date of the last report. We have disposed of the improvement bonds authorized by the corporation, to the amount of \$500,000, at a premium of 6 per cent. The proceeds of these bonds to the amount of about \$450,000 have been applied to the improvement account in ballasting of the road and relaying the track with steel rails and other minor improvements. Surveys have been directed to be made on the extension of the road from Groveton to Colebrook, with a view of determining if a practicable route can be found that will not require the use by this corporation of the tracks of the Grand Trunk Railway between Groveton and North Stratford; if the line should be found feasible it is desirable that the location shall be finally adopted as soon as the necessary surveys and estimates are completed.

"The surveys that were made during the year for the construction of the Pemigewasset Valley Railroad indicated that the line of that road could be constructed at a comparatively moderate cost. At a special meeting held in December, 1881, the board was authorized by the stockholders to make a contract with that road, providing that this corporation should take a lease of the road when completed, and operate the same for a period of 99 years, at a rental of 6 per cent. on its cost, estimated at about \$350,000 for the

20 miles, extending to North Woodstock, with the right to the control of any further extension that might be made. The construction of this road will open up a large tract of timber land, and materially increase the amount of freight to be transported on the road, and in the opinion of the board will be a substantial benefit to the business of our road. This road was placed under contract in February, and is now in process of construction, and is required by the contract to be completed before Nov. 1 of the present year.

"The contracts with the lower roads between Concord and Boston expired during the year, and negotiations are now in progress for their renewal, as the directors hope, at better rates than have heretofore been allowed to this road.

"The directors are of the opinion that the increasing business of the road will, before long, require the laying of a double track for a part, if not the whole, of the distance between Concord and Woodsville, and that it would be advantageous to have surveys and estimates of the cost of such improvements made at an early day."

#### New London Northern.

This company owns a line from New London, Conn., to Brattleboro, Vt., 121 miles. The road is leased and worked by the Vermont Central Trustees. The company makes a statement to its stockholders covering the year ending Nov. 30.

The company also owns the Brattleboro & Whitehall, a narrow-gauge branch running from Brattleboro to South Londonderry, 36 miles, which is worked by the lessees.

The balance sheet, condensed, is as follows:

Stock	\$1,500,000.00
Bonds	1,499,500.00
Bills payable	223,000.00
Coupons and dividends unclaimed	3,664.09
Profit and loss	202,558.78
Total	\$3,428,722.87
Construction	\$1,835,620.37
Brattleboro Extension	630,502.40
Brattleboro & Whitehall	197,439.16
Improvements, etc.	580,000.00
Total property	\$3,343,588.02
Lessees	51,499.79
Central Vt. R. R. Co.	3,550.00
Cash	30,085.06
Total	\$3,428,722.87

The bonds consist of \$300,000 first mortgage 6 per cent. bonds; \$387,500 second mortgage 7 per cent. bonds, and \$812,000 consolidated 5 per cent. bonds.

The earnings for the year ending Sept. 30 as reported by the lessees were as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Passenger Dep't.	\$214,118	\$189,818	I. \$24,300	12.6
Freight	345,755	356,735	D. 10,980	3.1
Other sources	51,170	44,703	I. 6,467	14.2
Total	\$611,043	\$591,246	I. \$19,797	3.3
Expenses	413,326	431,618	D. 18,292	4.2
Net earnings	\$197,717	\$159,728	I. \$37,989	23.7
Gross earn. per mile	5,050	4,887	I. 163	3.3
Net	1,634	1,320	I. 314	23.7
Per cent. of exps.	67.64	72.90	D. 5.26	

The traffic for the same period was as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Train miles	500,938	517,233	I. 43,705	8.4
Passengers carried	371,584	365,098	I. 6,486	1.8
Passenger miles	6,415,412	6,144,189	I. 271,223	4.4
Tons freight carried	400,072	409,428	D. 9,356	2.3
Ton miles	19,318,243	19,587,596	D. 269,353	1.4
Av. rate:				
Per pass. per mile	3.10 cts.	2.80 cts.	I. 0.30 ct.	10.7
Per ton per mile	1.79 "	1.80 "	D. 0.01 "	0.5

The company's statement to the stockholders gives the receipts and expenditures of the corporation for the year ending Nov. 30 as follows:

Cash on hand Dec. 1, 1880	\$17,144.13
Rent on road and other rents	197,405.00
Interest received	37,803.63
Bills payable	111,000.00
Unpaid dividends	562.00
Unpaid coupons	1,507.00
Central Vermont R. R., Dec. 1, 1881	3,450.00
Total	\$368,901.76

Brattleboro & Whitehall Railroad	\$65,120.83
Improvement account	13,183.81
New track at Miller's Falls	5,152.98
Change of grade at Miller's Falls	15,853.52
Interest	97,140.36
General expenses	5,277.28
Dividends for the year, four of 1½ per cent. each	90,000.00
Old dividends paid	573.00
Old coupons paid	853.86
Lessees' account, Dec. 1, 1881	15,661.06
Cash on hand, Dec. 1, 1881	30,085.06
Total	\$368,901.76

It will be seen that \$34,190.31 were expended on permanent improvements, besides \$95,120.83 for the Brattleboro and Whitehall road, making a total of \$129,311.14 for additions to the property.

#### Junction & Breakwater.

This company owns a line from Harrington, Del., to Lewes, 40 miles, with a branch from Lewes to Rehoboth Beach, 5 miles. The following figures are from statements made at the recent annual meeting for the year 1881.

The earnings for the year were as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Earnings	\$83,693	\$75,281	I. \$8,412	11.2
Expenses	43,678	44,744	D. 1,066	2.4
Net earnings	\$40,015	\$30,537	I. \$9,478	31.1
Gross earn. per mile	1.800	1.673	I. 0.127	7.6
Net	889	679	I. 210	31.1
Per cent. of exps.	52.19	59.07	D. 7.88	

There was paid out in addition to expenses \$24,000 for interest and \$20,241 for construction and new equipment; a total of \$44,241, or \$4,226 in excess of the net earnings.

There are controlled by the same owners and worked in connection with this road the Breakwater & Frankford road from Georgetown, Del., to the Maryland line at Selbyville, 19 miles, and the Worcester road from Selbyville across Worcester County, Md., to Franklin, Va., 36 miles.

The earnings of the Breakwater & Frankford road were:

	1881.	1880.	Increase.	P. c.
Earnings	\$28,673	\$23,616	\$5,057	21.5
Expenses	19,284	17,810	1,474	8.1
Net earnings	\$9,389	\$5,797	\$3,592	61.9
Gross earn. per mile	1,509	1,243	266	21.5
Net	494	305	189	61.9
Per cent. of exps.	67.10	75.49	D. 8.39	

The gross earnings of the Worcester road were \$45,000, or \$1,250 per mile, an increase of \$6,410, or 16.6 per cent. over the previous year.

The controlling interest in all the roads





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S. WRIGHT DUNNING AND M. N. FORNEY.

## EDITORIAL ANNOUNCEMENTS.

**Passes.**—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

**Addresses.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

## THE MASTER MECHANICS' CONVENTION.

Contrary to the usual practice, the annual meeting of the Master Mechanics' Association will this year be held after that of the Car-Builders' instead of before as has heretofore been the practice. A list of subjects on which reports are expected, and which will come up for discussion, will be found on another page. Of the pecuniary importance of these subjects and the interests which are ordinarily intrusted to master mechanics or locomotive superintendents, perhaps enough has already been said in these pages. Nevertheless a repetition of a few figures extracted from the data taken from the last Lake Shore report, and given in the article on operating expenses in the *Railroad Gazette* of May 12, may give a clearer idea to some readers of the responsibilities of the motive power department. On the Lake Shore road last year the expenditures and the percentage of the total working expenses were as follows:

		Per. cent. of total.
Repairs of locomotives.....	\$698,705.33	6.20
Fuel for locomotives.....	1,225,007.87	10.87
Water supply.....	68,078.49	.60
Oil and waste.....	122,880.48	1.09
Locomotive service.....	981,024.40	8.70
Total cost of motive power.....	\$3,006,296.63	27.46

It will thus be seen that more than a quarter of the whole expenses of operating this road has been for motive power. The average percentage of these expenses on the other roads in the country is probably quite as high as on the Lake Shore, and on some very much higher. If, then, the deliberations of the master mechanics should lead either to the evolution or dissemination of information which would indicate how these expenses may be diminished, their meetings will be of great importance to railroad companies.

It is always very difficult for persons to understand what are the essential or predominant elements in matters pertaining to any occupation or profession, if they have not had special training—and a great deal of it—in that direction. A person who is not an expert does not and cannot see the difficulties in the way of the success of any technical project, because these difficulties are often piled one on the other in an order and line of sequence so long that he cannot be made to understand it by giving the subject a limited amount of attention. It thus comes about that the people who have a limited knowledge of any art are often the most ready to adopt measures which are attended with great risks, and it is not unusual to find officers of railroads who are not experts in the mechanical department of railroad construction who seem to think that all improvements in that direction must be looked

for from novel and daring inventions, whose prospect of success they are apt to regard as bearing a somewhat inverse ratio to the ignorance of the inventors of the art to which their inventions pertain. They reason in this wise: People laughed at Watt and Stephenson, but they succeeded nevertheless; other people now laugh at this or that invention, therefore it will succeed. What it is desirable to point out here is that the chief and most important function of such associations as the master mechanics' is not so much the evolution of brilliant and novel inventions—although that association may aid in that direction at times—as it is to promote what might be called a wholesome level-headedness. That is, the aim of the Association should not be so much to disseminate knowledge of inventions which are brought out—although it may do that—as it is to evolve and make known “improvements” which are made by simplifying details, adopting better methods of putting work together, and thus making locomotives more substantial and more serviceable.

The meeting together of men in charge of the locomotive departments has, however, another good effect; it awakens them often from a kind of lethargy into which we are all liable to fall unless stirred up with some mental tonic occasionally. An illustration of how this acts may be given. The record of train accidents published in these pages during the last ten years shows that the number of locomotive boiler explosions in each year, beginning with 1872, during that time was as follows: 19,\* 16, 14, 26, 19, 15, 11, 17, 14, 14; total, 165.

Of these 94 exploded during the first five years, and 71 during the last five. It must be remembered that the number of locomotives in that time was steadily increasing, and yet there was a marked diminution in the number which exploded. It is true that it is still quite too large, but the reduction in the number is no doubt largely due to the fact that during the first five years the master mechanics had been attending the meetings of their Association, and heard the subject of explosions, boiler construction and inspection discussed each year, and if they did not attend, the reports were published and could be read by all. This had the effect of urging them to greater vigilance in the inspection, more care in construction, and an improvement in locomotive boilers generally. There is great room for more, it is true, but still any improvement is encouraging.

The stimulus which men get by attending these meetings is of course not confined to the improvement of boilers. There is hardly a subject on the list to be reported on in relation to which a man who attends the meetings of the Association for the purpose of gaining information will not learn something which will be useful to him and to the company by which he is employed. If we take the question of the best system of paying engineers and firemen to induce economy in working, it may be said that there is hardly a road of any importance in the country on which many thousands of dollars could not be saved by adopting an improved system of paying the engineers and firemen. The plan of paying each month one or a few premiums is irrational and ineffective in obtaining the ends sought. A premium to the man who consumes the least amount of coal will show which is the best engineer, but this is not the object aimed at. It is not important to know which is the best man, but it is desirable that all the men should be induced to do the best they can. Therefore a premium or bonus should be placed within the reach of all the men, proportioned of course to the results which they attain. Nevertheless, some very complicated questions arise when the attempt is made to perfect a system. On the Pennsylvania Railroad an allowance of fuel is made per car per mile, and the enginemen are paid as a bonus the value of part of the fuel less than that amount which they save. This is not entirely fair, because a very considerable proportion of fuel is consumed in running the locomotive alone, and by the Pennsylvania system if an engine should run over the line without a train, as one often does, there would be no fuel allowed for the run. It would seem to be more nearly just to allow a certain amount of fuel for the engine alone, and then an additional amount for each car. But even then another question would come up for consideration. The cost of wages of the trainmen, including engineer, fireman, conductor and brakemen, is as much as or more than the cost of fuel. Therefore in certain kinds of traffic, if the train-load is increased say 10 per cent., there is as much or more money saved in wages of these men as there would be if 10 per cent. less fuel was burned. There is no doubt, too, that there is a certain load less than the maximum which can be hauled by a locomotive with the least consumption of fuel per car per mile. The

\* The record for 1872 was for eleven months only.

aim should therefore be to induce the locomotive men to save not only fuel, but also to economize in the matter of wages of trainmen; or, in other words, to haul as big trains as possible. It would therefore seem to be fairest to allow a given amount of fuel per mile for the engine, and then establish a sliding scale for the allowance per car per mile, increasing the amount with each addition to the load over a certain amount. If some competent person would elaborate a system of that kind on an experimental basis, there “would be millions in it” to those railroads which would adopt it. It is the discussion of such questions as these which is likely to awaken the master mechanics who take part in it and give them fresh vigor and zeal in the performance of their duties.

A distinguished philosopher has said that “it is settled beyond dispute that organic evolution consists in a change from the homogeneous to the heterogeneous. This law of organic evolution is the law of all evolution.” If this principle is applied to the present condition of the Master Mechanics' Association, it is to be feared that it will not indicate that the process of evolution has gone on quite as rapidly as might be desired. If we go over the list of subjects for this year, and compare them with those which were investigated and reported on in past years, it will be found that the former have not undergone what the same philosopher would call “a process of differentiation.” To abandon his big words, though, what is meant is that the subjects appear to be almost too general and not sufficiently specific. If a committee is asked to report on “boiler construction,” it is apt to assume a more or less interrogative attitude of mind and ask: What do you want to know about boiler construction? There are some specific questions, though, about the subject to which replies are very much needed; such as does steel corrode more rapidly than iron; what is the cause of the frequent breakage of stay-bolts; what will prevent the grooving and cracking of plates along the edges of seams; how can crown-plates be stayed so as not to obstruct them with crown-bars and yet not subject the shell to unequal strains; why is it that on English engines furnace-door deflectors can be used, whereas here they are burned out in a few trips; what is the cause of the frequent breaking of coupling-rods; which spark-arrester throws the fewest sparks and starts the fewest fires.

This list of specific inquiries might of course be increased very largely. If a committee is requested to do some definite thing, the work is very much easier to do and much more certain to be done.

The members of the Association will be gratified to learn that Mr. David Joy, the inventor of the valve-gear which bears his name, has recently arrived in this country, and will read a paper at the meeting at Niagara. He has also had the best of opportunities for getting the latest information about Webb's compound locomotive which has his (Joy's) valve-gear, and will no doubt take pleasure in giving the latest reports and information about that locomotive. The attendance at the convention promises to be large, and there is no better place in the country to hold a meeting of this kind than Niagara.

## GRAIN MOVEMENT IN MAY.

The receipts of grain at the Northwestern markets are usually largest in the fall months, but next to these come the receipts from one or two months after the opening of lake navigation until July. The months from December to April, inclusive, have usually comparatively light receipts. For instance, in 1880, the receipts averaged about 15,600,000 bushels a month in January, February, March and April, and were extraordinarily heavy that year in those months, but rose to 24,647,000 bushels in May and 29,000,000 in June, and reached the maximum of 36,900,000 in September and 35,300,000 in October. In 1881 the average was 13,000,000 a month in the first four months, but the receipts were nearly 18,000,000 in May, and were 37,000,000 in June. After the bad harvest the September receipts were still 34,000,000, but the October receipts fell to 20,000,000.

This year in spite of the bad harvest the January receipts were 17,000,000 and the average of the first four months was 13,400,000 bushels, or a little more than last year; but the May receipts were a little less than this average (13,247,000 bushels) instead of 50 per cent. or so more, as is usual. The appearance thus is that the country was drained of grain unusually early, and there was not left the usual proportion of grain to be forwarded after navigation opened. And though June may make a better showing than May, yet in comparison with the 37,000,000 bushels received in June last year, it will doubtless make a much worse showing.

The receipts and shipments of these markets for the



first five months of the year for nine successive years, and the receipts of the seven Atlantic ports have been:

Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1874.....	62,391,206	42,578,405	50,206,341
1875.....	47,210,000	30,607,467	41,374,920
1876.....	55,528,548	47,437,052	58,020,017
1877.....	46,486,389	35,190,653	46,541,381
1878.....	78,112,524	62,185,390	89,118,174
1879.....	73,247,269	59,329,718	91,849,115
1880.....	91,377,662	69,544,101	90,833,348
1881.....	72,667,718	63,309,064	80,144,155
1882.....	66,875,498	53,319,941	37,588,135

What is most notable here is that in comparison with last year while the receipts of the Northwestern markets for the five months have fallen off but 6,000,000 bushels, and their shipments but 10,000,000, the receipts of the Atlantic ports have fallen off no less than 42,500,000 bushels, which is more than 55 per cent. This is only an additional proof of the fact which most who discuss the subject still refuse to see, namely, that the grain this year has been required for home consumption to an extent heretofore unknown. The receipts at the seaboard have been small because we have been able to spare very little for export. For several years past a very large proportion of the Atlantic receipts have come from interior points in the West and were not reported at any Northwestern market; until this year, receipts at the seaboard have greatly exceeded the shipments of the eight reporting Northwestern markets. The excess was 27,000,000 bushels in 1878, 32,500,000 in 1879, 21,300,000 in 1880 and 16,800,000 last year. This year the Atlantic receipts are 15,700,000 bushels less than the Northwestern shipments. The former have ceased to be the full-measure of the total grain movement.

The Northwestern receipts this year are the smallest since 1877, and are not much greater than in 1874, which was the first year after the panic but one when an extraordinary harvest was marketed. The decrease since 1880, the year of the heaviest movement, is 24,500,000 bushels, or 27 per cent. The decrease in shipments since that year is 21,800,000 bushels (31 per cent.), and in Atlantic receipts it is 53,200,000, or 59 per cent. The latter enormous decrease goes far to explain the difference between the condition of general business now and two years ago.

The figures for the five months, however, do not show the whole extent of the difference between the grain traffic this year and previously at this time, because, though the movement shows a great decrease for the five months, Northwestern receipts and shipments were unusually large in the first two months of the year. For the month of May the movement for six successive years has been:

Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1877.....	10,290,526	8,806,887	12,007,057
1878.....	21,752,885	18,890,579	25,024,972
1879.....	17,951,153	20,251,415	20,935,131
1880.....	24,647,190	20,983,326	21,546,158
1881.....	17,967,405	21,349,595	20,570,793
1882.....	13,247,124	9,941,804	9,885,160

Hence we see that the Northwestern receipts for the month were 26 per cent. less this year than last, the Northwestern shipments 53 per cent. less, and the Atlantic receipts 52 per cent. less. The decrease in the latter is at about the same rate as in previous months, but three-fourths of the total decrease in Northwestern shipments for the five months was suffered in the single month of May, and the decrease in the Northwestern shipments that month were 11,400,000 bushels, while for the previous four months there was an increase of 1,400,000 bushels.

The decrease in Northwestern receipts affects chiefly the Northwestern railroads, and some of these it affects considerably, because as a rule they get profitable rates for carrying grain, and for several it is a very important part of their traffic; and moreover, as we have shown, these roads have not heretofore this year suffered much decrease in grain traffic; the decrease January to April inclusive was but 1½ per cent.; in May it was 26 per cent.

The decrease in the Northwestern shipments might be supposed to affect principally the roads east of the Mississippi and Chicago; but it has not done so to anything like the extent of the total falling off in shipments. For in these four weeks last year the rail, lake and river shipments were:

	1882.	1881.	Decrease.	P. c.
Lake.....	5,206,475	13,021,951	7,725,476	59.3
Rail.....	4,309,433	6,256,071	1,946,638	31.1
River.....	335,816	2,071,573	1,735,757	83.8
Total.....	9,941,804	21,349,595	11,407,791	53.4

Thus of the total falling off of 11,400,000 bushels, 9,400,000 has been suffered by the water routes, and this in spite of the fact that the rail rates have been fully as high this year as last, and better maintained.

This again is due to the fact that the chief part of the grain has been required for domestic consumption, and that largely at places which cannot be reached by the water routes. The railroads this year carried 43½ per cent. of all the grain shipped from the Northwestern markets; last year but 29½ per cent.

But the reduction of lake shipments has been a very serious thing for the vessels; and the Mississippi River barges are, we believe, all laid up, the shipment down that river being made by ordinary steamboats and wholly to supply local wants, the New Orleans exports having been less than 7,000 bushels in May last.

It must not be supposed, however, that the loss to the railroads shown by the decrease of 1,947,000 bushels in Northwestern shipments, the gross earnings on which would be less than \$250,000, is the whole loss of the lines east of Chicago from the lighter grain movement. Very much greater is the loss by the decrease of the shipments from interior Western points, the whole of which we cannot measure, but which is indicated by the decrease of the receipts at Atlantic ports in excess of Northwestern shipments. This was not important in May; but in the four previous months it amounted to nearly 16,000,000 bushels, as we have seen.

And as the shipments from the Northwest have for the most part been arrested before reaching the seaboard this year, the roads have carried them shorter distances this year, and the decrease in the length of haul has fallen on the trunk lines east of Buffalo and Pittsburgh much more than on the western connections of these roads.

Large as was the decrease in the grain movement last month, we may expect it to be much greater in June, because the June receipts last year were extraordinarily large—no less than 37,000,000 bushels in five weeks, against 29,000,000 bushels in 1880. Last year more than 24,000,000 of the enormous receipts were at Chicago and Milwaukee, and the traffic and earnings of such roads as the Chicago, Milwaukee & St. Paul, the Chicago & Northwestern and the Chicago, Burlington & Quincy must have been greatly affected by them. The receipts will probably be small this year in comparison with the average receipts since 1877 (when also we were marketing the last end of a poor crop), but those who look back only one year will be sure to exaggerate the effect of the decrease.

Circumstances made receipts extraordinary in June last year. The hard winter and late spring forced into that month shipments of millions of bushels which, with such weather as we have had this year, would have been marketed earlier. The average June receipts for the three years previous to last year were less than 25,000,000 bushels, and in estimating the condition of business as affected by the grain movement, we should remember this when we examine reports of June receipts this year.

The harvesting of the winter wheat crop has probably progressed well already in all the Gulf states, where the acreage is unusually large and the condition (for that country) unusually good. In the other Southern states, where the conditions are the same but the acreage is much greater, the harvest will soon begin, and only bad harvest weather will prevent an unusually large crop. All these states together, however, do not produce as much as one of the Central states. Nearly all the winter wheat which is shipped to the seaboard comes from the row of five states from Ohio to Kansas inclusive, together with Michigan. In Kansas and part of Missouri the harvest is close at hand, and everywhere except in parts of Ohio and Indiana the present condition of the crop promise an average yield or more, but in all this district there is a considerable reduction in acreage. With the increase in the South, however, the acreage is probably about the same as last year, and the prospect now is of a crop not much less than the extraordinary one of 1880. On the strength of this prospect, it has been prophesied that there will be a revival of the grain movement in July. But it will not do to expect too much from a good winter-wheat crop, and especially it will not do to expect much too early. When the season has been early we have sometimes (in two or three years) had a heavy wheat movement in the last half of July. But the season is not early, and, moreover, shipments immediately after harvest are usually largely composed of the surplus of the previous year's crop. This year there is very little surplus left. And further, and principally, a really heavy grain movement in this country cannot be made by winter wheat alone. Usually, the larger part of the summer grain movement is made up of corn, which the farmers market after harvesting and before threshing their small grain. It is the failure of the corn crop much more than the failure of the wheat crop that made the great disaster of 1881. The decrease of 500,000,000 bushels in this one grain, the great staple for feeding hogs and horses and fattening cattle, has but recently been fully felt. And it will not be until near the end of the year that the new crop will begin to come forward. The unusually large acreage of oats in the South and West will lessen the re-

quirements of the farmer himself for corn, but not a very large amount of this grain is ever shipped, and almost none is exported.

The foreign demand does not seem to be pressing, but so far we have scarcely any reports of the prospects of grain in Europe. With a good crop it will not be in haste to take our surplus wheat; with a bad one it may be, the world's stocks not being very large now. Last year, in spite of the crop failure, we had a heavy grain movement until October, chiefly, doubtless, of old grain, and mostly corn. We cannot have such a movement this year, because we have little old grain. Therefore we shall not expect a heavy grain movement during the summer months, however well the wheat crop may turn out, but we may expect a decrease in the movement for local supply, because the consuming country, and especially the South, has provided to an unusual extent for its own wants by sowing more small grain, and especially more oats, than usual. It is not a misfortune, however, but the contrary, that the effects of the bad harvest of 1881 should be distributed over several months, instead of being concentrated in a few. Those who suppose that its effects are substantially past, however, do not sufficiently estimate the gravity of a reduction of 500,000,000 bushels in the corn crop and of 118,000,000 in the wheat crop of the United States.

#### Railroad Arbitration.

Arbitration plays a very important part in all the co-operative schemes of the railroads. The fundamental thing in these schemes is an agreement to divide traffic or earnings in certain definite proportions. It is (in these days) comparatively easy to get the companies to agree that they will divide, but when it comes to the proportions in which the business shall be divided there are almost always as many opinions as there are companies; and, each company's representative having for years been engaged in studying and asserting and improving the advantages of his own line, and the amount involved in 1 per cent. in traffic often being large, the negotiators not only differ but are obstinate in their differences. It was soon found, therefore, that an agreement to divide had comparatively little effect unless it was accompanied by an agreement to leave questions of difference to arbitration. In the organization of the trunk lines and their connections at first Mr. Fink did substantially the work of arbitration; and as he must have command of nearly all the facts on which a division of traffic is based, it was natural and almost inevitable that this should be so. But it is always desirable that in the trial of important cases the parties should have at least one appeal. Apparently, however, the establishment of the Board of Arbitrators and the selection of the arbitrators three years ago were without much consideration.

The ideal arbitrator is a man hard to find. Besides sound judgment, independence, a clear head, and sterling integrity, it is desirable that he should have a thorough knowledge of the business of transportation, that he may know what are the qualities in a line which command traffic, distinguish between the circumstances and the arts which have a permanent and those which have a temporary effect on business, etc. In short, he needs that kind of knowledge which it is hardly possible to gain except by experience in traffic management. The arbitrator is judge in cases that arise under the laws of transportation economics—laws which are not only not codified, but are scarcely formulated at all.

But while traffic management will give the right kind of man the knowledge needed by the railroad arbitrator, it is hardly favorable to the development of a judicial mind, and it usually causes such relations with employing and rival companies as to make it difficult for one recently engaged in it to act as a judge between such companies.

First of all it is indispensable that the arbitrator should not only be an able, clear-headed, independent man of the highest character, but that he should be known to be such. A man might have all the qualities required, but if we do not know that he has them we will not dare to trust him to try causes in which our fortunes are at stake.

The trunk-line presidents last week made some changes in the method of arbitration which are described in a circular which we publish on another page. These changes are such as tend to prevent procrastination and hasten an early decision of all questions of difference. There have been times when it has seemed as if delays were made purposely to prevent action which some road deprecated but knew to be inevitable if proceedings should be brought to a close. Meetings were appointed which the unwilling member would not attend; when arguments were called for it would be unreasonably long in preparing them; and



if arbitrators were to be selected, it would never agree. It was found desirable to limit the "dilatatory motions" which a company might make.

The new plan provides that questions of difference shall be fully discussed with the Commissioner, who shall submit all the facts in his possession; and his office may be defined as being chiefly a storehouse of facts. If after discussion there is no agreement the Commissioner is to recommend a solution. This recommendation is, in fact, the decision of the court of first resort. The important condition is added that this decision shall take effect immediately. Thus there is secured a basis for action with the least possible delay.

The Commissioner will then supply to the contending parties an abstract of the discussion and a statement of the reasons for his recommendation. If any party desires to appeal, he must do so within 14 days from the date of the receipt of this statement.

The appeal will be either to the one permanent Arbitrator whom the associated roads engage for that duty, or, if the parties prefer, to a board of three, consisting of this Arbitrator and two to be chosen for that special case by the contending parties. But to prevent delays, if the parties do not agree upon the two special arbitrators within 21 days, then the permanent Arbitrator and the Commissioner will select them.

The parties must submit their arguments within 21 days after notice that the case will be arbitrated, and the decision is to be rendered within 30 days. If any or all parties fail to submit arguments (as they may do, believing the facts on record to be sufficient), the decision will be made just the same.

It is extremely desirable that more pains should be taken with the arguments presented than has been the case heretofore. In this way it may be possible to develop, in time, a body of transportation common law, as it were, which will have permanent value, and help materially in settling the relations of carriers to each other in the future. The slightest knowledge of the practices of the courts teaches us that the good work of the judges would have been almost impossible but for great labor of the lawyers practicing before them, who give days to the study and elucidation of points to which the judge can give but hours, and in this way bring before him a complete array of all the facts and principles that tell on either side.

The trunk-line presidents choose as permanent Arbitrator Mr. Charles Francis Adams, Jr., Chairman of the late Board, and too well known to need further notice. His experience as a Railroad Commissioner gives him special qualifications for the work, and his service in the late Board was so eminently satisfactory that we believe that the opinion was universal that he was the right man for the place.

#### Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

**Burlington & Northwestern.**—A branch is completed from Winfield, Ia., west to Coppack, 16 miles. Gauge, 3 ft.

**Chesapeake, Ohio & Southwestern.**—Track laid from Covington, Tenn., north to the Hatchie River, 7 miles.

**Louisville, New Albany & Chicago.**—Track on the Air Line Division is laid from Delphi, Ind., southeast to Sheridan, 40 miles.

**Mansfield.**—Completed from Mansfield, La., east to Mansfield station, 7 miles.

**Milwaukee, Lake Shore & Western.**—Extended from Summit Lake, Wis., north to Pelican Lake, 15 miles.

**Missouri Pacific.**—The Omaha Extension is completed by laying track 14 miles southeast of Hiawatha, Kansas.

**Pennsylvania.**—The Juniata Branch is completed from a junction with the Scotia Branch to Juniata, Pa., 2 miles.

**Shenandoah Valley.**—Extended south by west to Roanoke, Va., 14 miles.

**West Jersey.**—A branch is completed from near Seaville, N. J., east to Sea Island City, 4½ miles.

This is a total of 119¾ miles of new railroad, making 3,323 miles thus far this year, against 1,574 miles reported at the corresponding time in 1881, 1,590 miles in 1880, 661 miles in 1879, 413 miles in 1878, and 570 miles in 1877, 628 miles in 1876, 296 miles in 1875, 537 miles in 1874 and 1,171 miles in 1873.

It should be remembered that one reason for the very large increase of track reported this year over last is the very mild winter, which allowed work to go on almost without interruption, while last year it was hardly possible to lay track anywhere north of the Ohio until late in April.

CONTRACTS TO SHIP EXCLUSIVELY BY RAIL OR STEAMER were required by the California Fast Freight Line about three years ago as a condition of a reduction in rates. That is, the shippers who would contract to ship all their freight by this line, or by the Pacific Mail, were granted a rate about one-third less than that charged shippers who did not so contract. This was done to secure freight which otherwise would be carried by sailing vessels around Cape Horn. These carry at rates which are but a fraction of the lowest rail rate, as the vessels go not to carry freight to San Fran-

cisco but to carry freight from that place, and cannot usually get full cargoes from New York. But they are five or six months on the voyage, and for most valuable goods the delay counterbalances the low rate, and almost every merchant is at times compelled to fill orders on short notice, and so must have recourse to the railroads.

There was a great deal of feeling expressed against this regulation of the transcontinental line when it was first issued, three years ago, and railroad men as well as shippers commonly condemned it; but most shippers, especially dry-goods merchants, soon acquiesced in it, and signed the contracts, under which the rates were generally reasonable. But there are some goods which are very heavy in proportion to value, the fashions of which do not change, and which suffer comparatively little from delay. The railroad company itself, we believe, sometimes ships rails around the Horn, and for pig iron, etc., that route is much the most economical. The hardware merchants at San Francisco have generally refused to make contracts with the railroad, but have received the bulk of their goods by sail, and have paid the higher rates on the goods required at short notice, saving more by the low sail rates than they lost by the high rail rates on their small rail receipts. Now the California Fast Freight Line has given notice of an increase in the difference between the rates on hardware to those who contract and to those who do not. Heretofore, the contract rate being \$2.50 per 100 lbs., \$4 was charged to other shippers; the latter rate is now made \$6. Great indignation is expressed by the hardware merchants, who say that it is especially dangerous for them to contract, because if they do so once, they must forever. As it takes nearly six months to receive by the clipper ships, should they desire not to contract after the expiration of their first contract for a year, they would be unable to receive any stock for that length of time.

The course of the railroad is not entirely defenseless, as might seem at first sight, as a pure question of transportation economics; but it seems decidedly impolitic, because it is almost universally regarded as tyrannical and grossly unjust; and the railroad companies must take account of such feelings on the part of the public, or they are likely to be made to suffer. It is almost useless to marshal the legitimate arguments in favor of the policy, and it is in fact very doubtful whether the possibilities of evil involved do not so greatly outweigh any advantages that the government ought to prohibit the giving of any advantage to those who contract to ship exclusively by the line granting it.

There are, however, plenty of precedents for the course of the railroad, though no cases that we know of in which such an enormous difference is made. The New York Central, as was shown before the Assembly Investigating Committee, was accustomed to make special rates to persons in the interior of New York who would agree to ship by that road to the exclusion of the Erie Canal; in England it is a general practice, we believe, to grant rebates to those who ship by one line to the exclusion of its competitors, and these contracts are enforced by the courts. And in Belgium, as we showed three years ago by a quotation from the official tariff, the State Railroad Administration itself grants a lower rate to those who ship by its lines exclusively than to those who ship partly by canal. Nevertheless it is a dangerous practice, in this country at least, like nearly every discrimination between shippers.

THE CHICAGO AWARD made by Mr. Fink has not been made public, but one of the newspapers says that "it is understood" that it gives the Chicago & Grand Trunk 11 per cent., instead of 10 by the arbitration of 1880, the two Pennsylvania roads 35½ per cent., instead of 33, and the two Vanderbilt roads 45½ per cent., instead of 49, the Baltimore & Ohio getting 8 per cent. as before. The contract of the roads agreed that the division should be made "generally" on the basis of the business of a certain year, and this would leave out of consideration entirely the distribution during the present year, in which the fluctuations have been extraordinary, the Vanderbilt roads in January and February getting an extraordinarily large proportion of the whole, and in the last two or three months an extraordinarily small one.

Any company dissatisfied with Mr. Fink's award may at any time before July appeal to arbitration. Of course each thinks it has been awarded too little, but so far there has been no appeal, which lessens the probability that there will be any. Meanwhile, Mr. Fink's award is the law, and transfers of freight may be made or balances paid in accordance with it, though probably no payments will be made until it is settled whether there will be an appeal.

Assuming that the above report of the changes of percentage is true (of which we know nothing), we may make some estimate of the gains or losses to the several roads. The 3½ per cent. said to have been taken from the two Vanderbilt roads last year would have amounted to 101,125 tons of freight, which carried through to New York in a year reasonably favorable for rates would yield probably \$700,000. Should the loss fall equally on the two lines at Chicago, the Michigan Central's share would be about \$105,000, the Lake Shore's \$192,000, the Great Western's and the Canada Southern's \$42,000 each, and the New York Central's (or other lines east of Buffalo) \$319,000. The latter sum is about equal to three days' earnings of the New York Central, but a considerable part of it will fall on the Boston & Albany, some on the Philadelphia & Erie and the Northern Central, and a little on other roads.

With the rates prevailing last year, however, including the first six months, when full rates were had on most freight, the 3½ per cent., or 101,125 tons, could have pro-

duced only about \$450,000, and an advance of 1¼ cents in the average rate per 100 lbs. from Chicago to New York would more than balance the loss of traffic.

The addition of 1 per cent., with the same estimated rates and the traffic of 1881 will give the Grand Trunk 28,893 tons and 202,000 of gross earnings, and the two Pennsylvania roads 72,233 tons and \$505,000 more earnings than the old percentages, or would if they carried all the freight through. But the Grand Trunk delivers a considerable part of its Chicago freight to the Erie at Buffalo, and the Pennsylvania a very considerable amount to the same company's connections, the New York, Pennsylvania & Ohio, at Mansfield and Urbana, and it is the transfer of the Erie's freight lines to the Fort Wayne which probably had most to do with increasing the Pennsylvania's percentage at Chicago this year.

THE GROWTH OF AGRICULTURE IN MINNESOTA is a subject of prime importance to several railroad companies, and one on which erroneous opinions are very common. The state keeps statistics of the total acreage under cultivation, the acreage of each crop and the average yield, which now extend over a period of 14 years. It appears from these records that the acreage under cultivation increased quite rapidly for three years till 1874, then slowly till 1878, very rapidly from 1877 to 1878 and 1878 to 1879, less rapidly from 1879 to 1880, and quite moderately from 1880 to 1881. Since the revival of growth which began after 1877, the total acreage under cultivation, the increase each year over the previous year and the percentage of that increase have been:

Year.	Total.	Inc. over previous year.	P. c. of inc.
1878.	3,429,164	537,481	15.7
1879.	4,090,039	660,875	19.3
1880.	4,503,761	413,722	10.1
1881.	4,729,536	225,775	4.8

Doubtless the increase in 1881 was less than the farmers had intended, because the very late spring greatly lessened the time during which they could plow and sow. This year in a comparatively small part of the state work has been hindered, but one should expect to find a great part of the growth of last year as well as the growth of this year proper shown in the increase of acreage under cultivation. There are as yet statistics of acreage only for wheat, the cultivation of which is being abandoned in the most thickly peopled parts of the state, so that the total acreage this is no more than last year. The whole increase is then to be looked for in other crops, and chiefly in corn, oats and meadows, of which we have no complete reports as yet.

The increase in acreage last year was not more than enough to give occupation for 5,500 adult males, and, if all devoted to wheat, with the average yield of the state that year (11.4 bushels per acre), would have produced 2,580,000 bushels—less than the production of several single counties in Illinois in an ordinary season.

Another commonly received opinion is exploded by the Minnesota statistics, namely, that it is an exceptionally good wheat state—has more than the average yield per acre in most other wheat states. But the figures show that the average yield since 1877 has never exceeded 13.3 bushels per acre, and that the average for the four years has been 12½ bushels per acre. Now, the average yield for the whole United States was 13 bushels or a trifle more in 1878, 1879, and 1880, and in 1881 fell to 10 bushels, the average for the four years being 12½ bushels. Minnesota evidently still enjoys the reputation which it made in earlier years, when it really had many excellent crops in succession, the state statistics showing the average yield in the four years from 1872 to 1875 to have been from 16 to 17.4 bushels; which reputation is continued by the good crops now commonly secured in the Red River Valley, where, however, there is now but a very small part of the total cultivated land of the state.

A WOOL IMPORT RATE was recently mentioned by the *Boston Commercial Bulletin* as an example of gross injustice by the railroads. It said that a rate of two cents a pound on wool was made from Australia to Boston by way of San Francisco and the railroads across the continent, while for shipments of wool over the same railroads from California 2½ cents was charged. It seems not to have suspected that if the Australian wool could not get the 2-cent rate by way of San Francisco it would go to Boston just the same, but all the way by sea. The railroads not being able to get \$55 a ton on this do a service to themselves and to the country also by taking it at any lower rate which will more than pay the bare cost of carrying. The 2½-cent rate is equal to 1½ cents per ton per mile, which cannot be called high for such a freight as wool. If it makes a contribution towards the interest on the cost of the roads equal to the average of the freight the profit on it should be about \$25. But rather than lose all this profit the roads will reduce their rates \$24, leaving but a single dollar of profit, which is better than nothing. No one is the worse off except the ships which compete for the carriage of the wool.

We published just three years ago a translation of a masterly article by a French engineer on the Principles governing Railroad Rates, which gave special attention to this question of import rates, and, curiously, his chief example for illustration was a rate on wool. Wool was taken from Algiers by way of Marseilles to Roubaix, on the Belgian frontier, for the same rate as from Marseilles. But if the regular rate from Marseilles were charged on Algerian wool in addition to the cost of the carriage across the Mediterranean, all this wool would go by British ships to Dunkirk, and then a few miles south by rail to Roubaix, as, indeed, it formerly did go. The principle that unless you can make your average rate of profit on a business offered, you must refuse it, would be destructive to most kinds of business and would



be deadly to transportation, and especially to railroad transportation.

De La Gournerie's article on the principles of rate-making, by the way, is now published in Paris, in a little volume, with other papers on railroad competition, etc., and we know of nothing better calculated to disabuse the mind of the common errors regarding the equities of rate-making.

CHICAGO RAIL SHIPMENTS EASTWARD for the week ending May 27 were 27,124 tons, against 47,523 tons in the corresponding week of last year, 31,218 in the corresponding week of 1880, and 24,556 tons in the previous week of this year. There has been a small increase now for two successive weeks, but the receipts are still smaller than in any previous week since the yard switchmen's strike in the first week of May last year.

Of the shipments this year 10.9 per cent. were by the Chicago & Grand Trunk, 18.6 by the Michigan Central, 19.2 by the Lake Shore, 31.3 by the Fort Wayne, 12 by the Pan-handle, and 8 by the Baltimore & Ohio. The two Vanderbilt roads have 37.8 per cent. of the whole, which is the most they have had for a long time, the two Pennsylvania roads have 43.3 per cent. of the whole.

These shipments, it should be remembered, include all the east-bound shipments from Milwaukee by the Milwaukee & St. Paul and the Northwestern roads, and all the large through shipments from the Minneapolis flour mills by way of Chicago, together with all other shipments from points on railroads west of Chicago, which are billed through Chicago to points as far east as Buffalo, Pittsburgh or other western terminus of a trunk line. The importance of these shipments which do not originate at Chicago, but are received at Chicago by the roads thence to the East, may be judged by the fact that out of \$64,000 tons received by these roads at Chicago in the first four months of this year, no less than 359,000 tons (41½ per cent. of the whole) originated and was billed at points west of Chicago—some at St. Louis and Missouri River points, and much from Milwaukee and Northwestern points.

For the week ending June 4, the shipments of freight billed from Chicago, not including shipments through Chicago, were 19,497 tons, against 31,186 tons in the corresponding week last year, and 18,737 in the previous week this year. The grain and flour shipments were 14,304 tons this year, against 24,671 last year. The provision shipments were about one-fifth less this year; the flour shipments were 74 per cent. less. The distribution by routes is of but little significance, as it is likely to have been quite different from that of the total shipments.

THE CHESAPEAKE & OHIO RAILROAD is preparing to compete in earnest for a share of the export grain traffic by the construction of a large elevator at its seaboard terminus at Newport News. This road affords quite a short line to the sea from the Ohio Valley and points no further north than Indianapolis, St. Louis and Kansas City, which include a large part of the winter wheat and corn belt, and Kentucky and Tennessee also have sometimes considerable wheat to send East, though usually most of their surplus is required by the states south of them. The distance from Cincinnati or Louisville to Newport News is about 725 miles, and from St. Louis about 985 miles; while the distance from St. Louis to Philadelphia is 971 miles by the Pennsylvania, and to Baltimore it is 920 miles by the Baltimore & Ohio. By the latter road the distance from Cincinnati to Baltimore is only 579 miles. The only great grain market in this district is St. Louis, but the grain there usually goes through to the East or South from the farmers' stations.

While this road seems not to have any advantage over the roads further north for carrying grain to the seaboard, it is still in position to secure a part of the traffic, just as the Grand Trunk carries from Chicago or places still further south by way of Montreal to Boston or Portland; and as many vessels load with cotton at Norfolk, low ocean rates can probably be had if only enough grain is offered to fill up the cotton cargoes. The country where the Chesapeake & Ohio can seek shipments to the best advantage now ships chiefly by the Baltimore & Ohio and the Pennsylvania, which have lines directly through it.

THE PRESIDENCY OF THE LOUISVILLE & NASHVILLE has been formally declined by Mr. Fink, in a letter which we publish elsewhere. This position is certainly an important and honorable one, and it has special attractions for Mr. Fink, as his 18 years' service on the road, much of the time as its actual executive, had made the duties familiar and comparatively easy to him, and ties of friendship and family draw him to Louisville; but one must have had either a greatly exaggerated opinion of the presidency of the Louisville & Nashville or a grossly inadequate idea of the importance of the work Mr. Fink is now conducting to suppose that it would be a "promotion" for him to go back to the railroad company. It is true that where he is he exercises scarcely any absolute authority, and has not the great army of subordinates and the greater army of customers which give some show of justification to the expression of "railroad king," as applied to the president of a great railroad; but no railroad president ever had a more important task, and none a task of such universal importance to what we may call the science of railroad transportation throughout the world, as that which Mr. Fink now has to conduct, and not only to conduct but to design, with very little help from any past experience. That the man who, by universal consent, is considered not only the best but virtually the only person fitted to conduct such a work, could attain a more important position anywhere in railroad service seems to us an extraordinary idea.

THE LEAPING OF A DRIVING-WHEEL we are called upon to account for by a correspondent, who asks: "When a leading driving-wheel of a locomotive on one side, running about 35 miles an hour, lifts clear of track, what force or forces cause the result? Track straight and level or nearly so. Would the wheels being unequally counterbalanced cause one to lift?" This correspondent says that the phenomenon described "is claimed" to have occurred repeatedly on an engine running in New Jersey.

A philosopher once was asked why a pail of water with a fish in it would not weigh any more than it would without the fish. A fool determined not to account for it, but to try whether there was any difference in weight with or without the fish. We regret to be obliged to assume the attitude of the fool in relation to the above inquiry, and to be compelled to ask for more evidence that the phenomenon described actually does occur before we attempt to account or give reasons for it.

CHICAGO & NORTHWESTERN EARNINGS for the fiscal year ending May last show an increase of nearly \$4,300,000, or 22½ per cent., over the previous year, the increase in average mileage worked having been about 17 per cent. The increase in passenger earnings was nearly 24 per cent. for the whole year, but in May it was only 10 per cent., and generally this year there has not been the increase in passenger earnings that might be expected in view of the heavy immigration, which affords this road a large business. The increase in freight earnings was 9½ per cent. in May and 21½ per cent. for the year. Much of the country on the lines of this road in Iowa and Minnesota had very light crops last year, but there was unprecedented activity in the lumber and iron ore traffic, of which it has a very large amount, and the country which it serves grew very fast.

## General Railroad News.

### MEETINGS AND ANNOUNCEMENTS.

#### Meetings.

Meetings will be held as follows:  
Central, of New Jersey, special meeting for election of directors, at the office in Jersey City, June 23; polls will be opened from noon to 3 p. m. Transfer books close June 2.

Oregon Railway & Navigation Co., annual meeting, in Portland, Or., June 19.

Oregon & Transcontinental Co., annual meeting, in Portland, Or., June 19.

New York & New England, special meeting, in Boston, June 15, to vote on the question of accepting the act passed by the Massachusetts Legislature authorizing the company to buy the state stock; also on the question of authorizing an issue of \$5,000,000 second-mortgage bonds.

Ogdensburg & Lake Champlain, annual meeting, in Ogdensburg, N. Y., June 21.

#### Railroad Conventions.

The Master Car-Builders' Association will meet in annual convention in Philadelphia, June 13.

The Yerdmasters' Association will hold its annual convention in Baltimore, June 14.

The Master Mechanics' Association will hold its annual convention at Niagara Falls, beginning on June 20.

#### Dividends.

Dividends have been declared as follows:  
Chicago & Northwestern, 2 per cent., quarterly, on preferred stock, and 3½ per cent., semi-annual, on common stock, payable June 28. Transfer books close June 14. The preferred stock dividend is increased from 1½ to 2 per cent.

Union Pacific, 1½ per cent., quarterly, payable July 1. Transfer books close June 10.

Old Colony, 3½ per cent., semi-annual, payable July 1. Transfer books close June 15.

New York Central & Hudson River, 2 per cent., quarterly, payable July 15. Transfer books close June 15.

#### Foreclosure Sales.

The Cleveland, Mt. Vernon & Delaware Railroad was resold in Akron, O., June 7, to J. M. Adams, J. A. Hersey and H. W. Smithers, purchasing committee for the Holland bondholders. The amount paid was \$1,150,000. The purchasers constitute the corporation known as the Cleveland, Akron & Columbus Railroad Company, which for a time held the road through purchase at the former sale, which was afterwards set aside for certain technical legal reasons.

#### Young Men's Christian Association, Railroad Branch.

The conference held in Springfield, Mass., May 25-28, was a very successful one. The attendance was large, the addresses made and papers read were of much interest, and an active interest was manifested in the work, which was encouraging. Several of the addresses and papers by practical railroad men were in themselves excellent evidence of the practical good effected by this form of Christian work. The conference must certainly have helped in bringing before railroad men the nature of the work and the good which it accomplishes, and this is one of its main objects.

#### Engineers' Club of Philadelphia.

At the regular monthly meeting held May 20, Vice-President Percival Roberts, Jr., in the chair, 27 members and 5 visitors were present. Mr. T. M. Cleemann read a paper on the "Most Economical Height of Bridge Truss." He said that in most cases of bridge design, after the span was fixed, the height of the truss was only governed by the judgment of the engineer, who generally assumed a proportion derived from some previously constructed bridge. It is not difficult, however, to find the most economical height, and the method applied to a Howe bridge was explained, and the result of a similar application to one of the largest iron bridges heretofore constructed likewise stated. He also continued some remarks that he had previously made on the strength of wrought-iron columns, especially discussing certain experiments which had been lately made at Watertown, with the formulas that had been proposed to represent their strength. The latter paper was discussed at some length by Messrs. H. Constable, Strong, Haupt and P. Roberts, Jr.

Mr. George S. Strong gave an interesting illustrated description of experiment in the application of his feed-water heater to locomotive engines, and also described new devices of his invention, for the piston and connecting rods of locomotives and for a spark-arrester.

Various favorable communications were read from members of Congress in reply to the communication of the Club urging the passage of House Bill 4726.

#### Master Mechanics' Association.

This Association will hold its fifteenth annual convention at the International Hotel, Niagara Falls, beginning on Tuesday, June 20. Members are requested to secure rooms through the Chairman of the Committee of Arrangements, Mr. F. M. Wilder, Susquehanna, Pa., or through the Secretary of the Association.

The following are the subjects for discussion, and the names of members appointed to investigate and report on them:

Improvements in Boiler Construction.—Reuben Wells.

The Best Material and Form of Construction for Parallel Rods of Locomotives to Prevent Breaking.—Howard Fry.

New Plans of Construction and Improvement of Locomotive Engines.—W. Woodcock.

The Most Practicable and Best System of Paying Premiums to Locomotive Engineers and Firemen to Induce Economy in Working Locomotives.—F. M. Wilder.

Committee to Investigate and Recommend a Suitable Standard Wire Gauge for Adoption.—R. H. Briggs.

Smoke-Stacks and Spark Arresters.—James Sedgely.

Mr. P. H. Dudley and Prof. Henry Morton were requested to read papers at the meeting.

#### Trunk Line Presidents' Meeting.

At a meeting of the presidents of the trunk lines at Mr. Fink's office in New York Jan. 1, Mr. H. J. Jewett, of the New York, Lake Erie & Western; Mr. J. W. Garrett, of the Baltimore & Ohio; Mr. George B. Roberts, of the Pennsylvania; and Mr. Wm. K. Vanderbilt, Second Vice-President of the New York Central & Hudson River, were present.

New regulations for arbitrating questions of difference between the companies were adopted, and Mr. Charles Francis Adams was chosen Arbitrator, as noted in a circular elsewhere published.

#### New Rules for Arbitration between Railroads in Joint Executive Committee.

The following circular has been issued from the office of the Chairman of the Joint Executive Committee, dated June 1, with regard to "apportionment of Board of Arbitration and method of presentation and procedure before the same:"

At a meeting of the Presidents of the Trunk Lines, held on Wednesday, May 31, 1882, the following plan for the settlement of all questions of difference between the Trunk Lines, in accordance with agreement of Feb. 1, 1882; also between the members of the Joint Executive Committee was adopted, and is submitted to the Joint Executive Committee for approval.

"First.—All questions of difference between the members of the Committee shall first be fully discussed with the Commissioner at a meeting of the authorized representatives of the said companies, before which meeting it shall be the duty of the Commissioner to lay all the facts in his possession bearing upon the case and to hear the views of each party, and to make such suggestions as he may deem necessary that would likely lead to a settlement by mutual agreement.

"Second.—If an agreement cannot be reached, the Commissioner shall make a recommendation as to the proper solution of the question at issue, and his recommendation shall be put into effect immediately, or at such time as may be agreed upon.

"Third.—The Commissioner shall furnish an abstract of the discussion, giving the facts, and the views expressed by each party, and the reasons for his recommendation, and a copy of this abstract shall be furnished to each of the interested parties.

"Fourth.—If within 14 days from the date upon which said abstract reaches the parties no objection is made to the recommendation of the Commissioner, the conclusion shall be considered final.

"Fifth.—If any objection is made, the party objecting shall give notice, within 14 days from the date of the receipt of said abstract, of its intention to submit the question to arbitration.

"Sixth.—One arbitrator shall be appointed, to whom all questions upon which the interested parties cannot agree, or do not accept the recommendations of the Commissioner, shall be submitted, unless the parties in interest desire in any special case to have an arbitration by three arbitrators; in that event the two additional arbitrators are to be selected by the parties in interest, but they failing to do so within 21 days after giving notice of their intention to submit the case to arbitration, the permanent arbitrator and the Commissioner shall make the appointment of the two special arbitrators.

"Seventh.—In either case, whether appeal is made to the permanent Arbitrator alone, or to the Board of Arbitration as heretofore provided, the decision shall be rendered within 30 days from the date of notice of submission to arbitration, the arguments to be presented or heard within 21 days of such notice. If such arguments are not furnished within that time, the arbitrators shall proceed upon the facts that may be before them, and their decision shall be final.

"Eighth.—When any change is made in the recommendation of the Commissioner, by the arbitrators, said change shall take effect as from the time the recommendation of the Commissioner took effect.

"Ninth.—The Arbitrator and Commissioner shall adopt such details of procedure in cases of arbitration as may be deemed necessary for the prompt transaction of business."

Upon motion it was  
Resolved, That we select and recommend as permanent Arbitrator Mr. Chas. F. Adams, Jr., to serve in such capacity for the term of one year from June 1, 1882, at the salary formerly agreed upon.

Please record your vote on one of the enclosed copies, and return to this office at your earliest convenience.

C. W. BULLEN,  
Assistant Secretary.

ALBERT FINK,  
Chairman.

#### ELECTIONS AND APPOINTMENTS.

Boston, Hoosac Tunnel & Western.—The board has elected Ginery Twitchell President; Wm. Reynolds, General Manager; Ginery Twitchell, F. L. Ames, W. R. Garrison, Robert B. Minturn, Lewis May, Executive Committee.

Baltimore & Delta.—The officers are: Wm. H. Waters, President; Wm. Gilmor, Vice-President; Thomas Armstrong, Treasurer; S. G. Boyd, Secretary and Superintendent; E. P. Pleasants, Chief Engineer.

Baltimore & Potomac.—At the annual meeting in Baltimore, June 7, Gov. Oden Bowie was re-elected President, with the old board of directors.

Boston & New York Air Line.—At the annual meeting in Middletown, Conn., June 6, the following directors were chosen: Silas F. Loomer, Willimantic, Conn.; John N. Camp, Middletown, Conn.; Simeon E. Baldwin, Henry G. Lewis, New Haven, Conn.; T. L. Watson, Bridgeport, Conn.; Theodore Adams, Philadelphia; S. S. Sands, Brooklyn, N. Y.; A. Duprat, Henry B. Hammond, D. B. Hatch, James



**H. Smith, New York.** The new directors are Messrs. Adams and Duprat, who succeed E. H. Bonner and H. W. Webb. The board elected Henry B. Hammond President, T. L. Watson, Secretary; D. B. Hatch, Treasurer.

**Broadway Connecting Underground.**—At a meeting held in New York, June 6, the following directors were chosen: George Ticknor Curtis, Robert Sewell, James F. Pierce, Douglas Campbell, E. W. Paige, George G. Schermerhorn, George C. Layard, George P. Sheldon, John T. Howard, Herbert N. Curtis, Francis A. Stout, D. Colden Murray, James F. Ruggles.

**Buffalo, Pittsburgh & Western.**—Mr. E. H. Witter is appointed Assistant Superintendent, with office at Oil City, Pa. Mr. Thomas Hilliard is appointed Road-Master, with office at Oil City, Pa. The above appointments took effect June 1.

On and after Tuesday, June 6, 1882, the offices and addresses of the General Superintendent, Auditor and Assistant Treasurer of this company are at No. 43 Exchange street, Buffalo, N. Y., instead of Oil City, Pa., as at present.

**Canada Atlantic.**—At the recent annual meeting the following directors were chosen: John Rankin, Montreal; E. McGillivray, G. P. Patton, George H. Perley, McLeod Stewart, Ottawa; Duncan A. McDonald, Lochiel, Ont.; Alexander A. Stewart, Kenyon, P. Q.; Guy C. Noble, E. C. Smith, St. Albans, Vt. The board elected E. McGillivray President; McLeod Stewart, Vice-President; A. W. Fleck, Secretary and Treasurer; J. J. Gormally, Solicitor.

**Canada Southern.**—At the annual meeting in St. Thomas, Ont., June 7, the following directors were elected: W. H. Vanderbilt, C. Vanderbilt, J. Tillinghast, A. G. Dulman, Augustus Schell, S. F. Barger, Sidney Dillon, Joseph E. Brown, E. A. Wickes.

**Canadian Pacific.**—Mr. G. M. Bosworth has been appointed Assistant General Freight Agent, and Mr. G. W. Hibbard, Assistant General Passenger Agent of the Eastern Division, both appointments taking effect June 1. All correspondence and communications in connection with their respective departments must be addressed to them at Montreal.

**Chesapeake & Delaware Canal.**—At the annual meeting in Philadelphia, June 5, the following were chosen: President, Andrew C. Gray; directors, H. Pratt McKean, John F. Gilpin, Thomas A. Biddle, Isaiah Williamson, Charles H. Hutchinson, John R. Baker, Charles Dutilh, G. S. Benson, James C. Fisher, Henry C. Ford, Joseph E. Gillingham.

**Chesapeake & Ohio Canal.**—At the annual meeting in Annapolis, Md., June 5, the following were chosen: President, Henry D. Farnandis; directors, Patrick Hamill, John Humbird, James F. Berret, Thomas P. Morgan, James A. L. McClure, Lewis Cass Smith.

**Chicago, Burlington & Quincy.**—Mr. D. G. Cushing is appointed General Storekeeper, with office in Aurora, Ill. He has been on the road a long time.

**Chicago, Milwaukee & St. Paul.**—At the annual meeting in Milwaukee, June 5, the following directors were chosen: Alexander Mitchell, S. S. Merrill, John Plankinton, Milwaukee; Jason C. Easton, Chaffin, Minn.; Selah Chamberlain, Cleveland, O.; Hugh T. Dickey, Peter Geddes, Jeremiah Millbank, Wm. Rockefeller, James Stillman, Abraham R. Van Nest, Julius Wadsworth, James T. Woodward, New York. The only new director is Mr. Woodward, who succeeds David Dows.

**Chicago & Northwestern.**—At the annual meeting in Chicago, June 1, the following directors (one-third of the board) were chosen for three years: Albert Keep, Chicago; Samuel F. Barger, Chauncey M. Depew, A. G. Dulman, M. L. Sykes, Augustus Schell, New York. They are all re-elected. The board elected the following officers for the ensuing year: President, Albert Keep; Vice-President, M. L. Sykes; Second Vice-President, Marvin Hughitt; Treasurer, M. L. Sykes; Secretary, M. L. Sykes; Assistant Secretary, J. B. Redfield; Assistant Treasurer and Assistant Treasurer in New York, S. O. Howe; Executive Committee, Albert Keep, Augustus Schell, A. G. Dulman, W. L. Scott, Samuel F. Barger, C. M. Depew and D. O. Mills.

**Chicago & Northwestern Proprietary Lines.**—At the annual meetings in Chicago, June 1, directors and officers were chosen as follows for these lines, all of whose stock is owned by the Chicago & Northwestern: **Chicago, Milwaukee & Northwestern.**—Directors, Albert Keep, M. L. Sykes, M. Hughitt, J. H. Howe, J. D. Layng, M. M. Kirkman, B. C. Cook, C. E. Simmons and J. B. Redfield; President, A. Keep; Vice-President, M. Hughitt; Treasurer, M. L. Sykes; Secretary, J. B. Redfield. **Dakota Central.**—Directors, Albert Keep, M. L. Sykes, M. Hughitt, M. M. Kirkman and J. B. Redfield; President, Albert Keep; Vice-President, M. Hughitt; Treasurer, M. M. Kirkman; Secretary, J. B. Redfield. **Elgin & State Line.**—Directors, Albert Keep, M. L. Sykes, Marvin Hughitt, J. H. Howe, J. D. Layng, B. C. Cook, M. M. Kirkman, C. E. Simmons, J. B. Redfield; President, Albert Keep; Vice-President, M. L. Sykes; Treasurer, M. M. Kirkman; Secretary, J. B. Redfield. **Essex & Lake Superior.**—Directors, Albert Keep, M. L. Sykes, M. Hughitt, J. H. Howe, B. C. Cook, M. M. Kirkman and J. B. Redfield; President, Albert Keep; Vice-President, M. Hughitt; Treasurer, M. M. Kirkman; Secretary, J. B. Redfield. **Menominee River.**—Directors, Albert Keep, M. L. Sykes, M. Hughitt, M. M. Kirkman and J. B. Redfield; President, Albert Keep; Vice-President, M. L. Sykes; Treasurer, M. M. Kirkman; Secretary, J. B. Redfield. **Rock River.**—Directors, Albert Keep, M. L. Sykes, M. Hughitt, J. D. Layng, M. M. Kirkman, H. C. Wicker, E. H. Johnson, Chas. E. Simmons, B. C. Cook, F. P. Crandon and J. B. Redfield; President, Albert Keep; Vice-President, M. Hughitt; Treasurer, J. B. Redfield; Secretary, M. M. Kirkman. **Winona & St. Peter.**—Directors, A. Keep, A. G. Dulman, M. L. Sykes, M. Hughitt, J. D. Layng, J. H. Howe, M. M. Kirkman, B. C. Cook and J. B. Redfield; President, Albert Keep; Vice-President, M. L. Sykes; Treasurer, M. L. Sykes; Secretary, J. B. Redfield; Assistant Secretary, S. O. Howe.

**Chicago, Rock Island & Pacific.**—The annual meeting in Chicago, June 7, resulted in the election of the following directors for three years: David Dows, Sidney Dillon, H. R. Bishop, New York; R. R. Cable, Rock Island; Hugh Riddle, Chicago. Mr. Bishop succeeds W. L. Scott, of Erie, who declined a re-election. Out of a total of 419,508 shares 364,269 voted. The board elected Hugh Riddle President; David Dows and R. R. Cable, Vice-Presidents; Francis Tows, Secretary and Treasurer.

**Chicago, St. Paul, Minneapolis & Omaha.**—At the annual meeting in Hudson, Wis., June 3, the following directors (one-third of the board) were chosen for three years: Benjamin Brewster, August Kountze, Philatus W. Sawyer, A. H. Wilder. The stockholders also elected W. D. Washburn and Henry T. Welles for two years to fill vacancies made by the resignation of John Comstock and G. I. Seney.

The full board is now as follows: A. H. Wilder, E. F. Drake, St. Paul, Minn.; W. D. Washburn, Minneapolis, Minn.; Philatus Sawyer, Oshkosh, Wis.; R. R. Cable, Rock

Island, Ill.; H. H. Porter, Chicago; H. R. Bishop, Benjamin Brewster, David Dows, Roswell P. Flower, L. M. Fiske, August Kountze, Henry T. Welles, New York.

The board elected H. H. Porter President; Philatus Sawyer, First Vice-President; R. P. Flower, Second Vice-President and Treasurer; C. W. Porter, Secretary; R. E. Gerion, Assistant Treasurer; C. A. Hilliard, Assistant Secretary; H. H. Porter, P. Sawyer, David Dows, R. P. Flower, E. F. Drake and H. R. Bishop, Executive Committee.

**Columbia & Puget Sound.**—At the annual meeting in Seattle, Wash. Ter., recently, the following directors were chosen: C. H. Prescott, A. A. Denny, B. Gatzert, J. N. Dolph, W. H. Romer. The directors then chose C. H. Prescott President; J. N. Dolph, Vice-President; Joseph Simon, Secretary; W. H. Romer, Assistant Secretary and Treasurer; J. L. Howard, Superintendent; James M. Colman, Assistant Superintendent. The road is controlled by the Oregon Railway & Navigation Company.

**Concord & Claremont.**—At the annual meeting in Concord, N. H., May 31, the following directors were chosen: Daniel W. Johnson, Dexter Richards, Charles P. Sanborn, Henry C. Sherburne, Charles O. Stearns, Mason W. Tappan, George E. Todd. The board elected Henry C. Sherburne, President; John Y. Muggridge, Clerk; George A. Kettell, Treasurer; George K. Hazleton, Assistant Treasurer.

**Danville, Mocksville & Southwestern.**—At the annual meeting in Edgewood, N. C., May 22, the following directors were chosen: Joseph Marsh, C. C. Sharp, Thomas R. Sharp, H. M. Shiver, Alexander Smith, E. C. Winstanley. The board elected officers as follows: President, Thomas R. Sharp, New York; Secretary and Treasurer, E. C. Winstanley, Danville, Va.

**Delaware & Hudson Leased Lines.**—The following companies, whose roads are leased to the Delaware & Hudson Canal Company, have chosen directors as below: **Rensselaer & Saratoga.**—I. C. Allen, Isaac V. Baker, George C. Cramer, Thomas Dickson, James Forsyth, J. W. Fuller, E. Thompson Gale, Wm. H. Hart, H. C. Lockwood, W. A. Shepard, C. W. Tillinghast, John H. Warren, J. M. Warren. **Saratoga & Schenectady.**—George H. Cramer, Legrand C. Cramer, E. Thompson Gale, C. N. Lockwood, T. W. Lockwood, James M. Marvin, C. B. Russell, Joseph M. Warren, Stephen E. Warren.

**Denver & Rio Grande.**—The following appointments of division officers are announced: First Division, W. H. Bancroft, Superintendent, Pueblo, Col.; Second Division, R. M. Ridgway, Superintendent, Alamosa, Col.; Third Division, Cole Lydon, Superintendent, Leadville, Col.; and J. W. Ward, Dispatcher, Buena Vista, Col.; Fourth Division, J. A. Myers, Superintendent, Salida, Col.

**Florida Southern.**—Mr. N. R. Gruelle takes charge of the new work on this road as Chief Engineer and Superintendent of Construction. Mr. H. S. Ming is Superintendent; S. H. Bass, General Freight and Passenger Agent; J. E. Rider, Cashier and Auditor; A. L. McFarland, Road-Master and Superintendent of Bridges and Buildings; J. W. Roberts, Master Mechanic.

**Ft. Worth & Denver City.**—The officers are: President, J. M. Eddy; Vice-President, T. W. Pearsall; Secretary, W. A. Ross; Treasurer, C. L. Frost. Offices at Ft. Worth, Texas.

**Junction & Breakwater.**—At the annual meeting in Georgetown, Del., June 1, the following directors were chosen: N. L. McCready, Henderson Moore, John Bodine, Charles C. Stockley, Harbeson Hickman, Edward D. Hutchens, Thomas Baumgardner, Benjamin Burton, John W. Causey. The board re-elected N. L. McCready President.

**Kansas City, Fort Scott & Gulf.**—Mr. P. F. Clinton has been appointed Division Superintendent in charge of the Short Creek & Joplin, the Rich Hill and the Memphis, Kansas & Colorado branches.

**Kansas City, Lawrence & Southern Kansas.**—The following additional appointments are announced on this road, now under control of the Atchison, Topeka & Santa Fe: Superintendent, J. L. Barnes; Auditor, H. C. Whitehead; Superintendent of Telegraph, J. H. Hill; Road-Master, J. D. Hildebrand. The offices of the above-named officers are at Lawrence, Kansas; those named below are at Ottawa, Kansas: Master Mechanic, T. D. Volk; Chief Train Dispatcher, T. J. Whisenand.

**Little Saw Mill Run.**—At the annual meeting in Pittsburgh, last week, the following were chosen: President, John Hollingshead; directors, John Haworth, Jacob Henrici, Henry Hice, Jonathan Lenz, John B. Neeld, Robert Young.

**Missouri Pacific.**—Mr. A. W. Dickinson is appointed Superintendent of Terminal Facilities in St. Louis. He will have charge of the Union depot and the freight stations and yards in St. Louis, and of short terminal sections of all this company's lines and of the Wabash, St. Louis & Pacific also.

**Mutual Union Telegraph.**—The new board has elected the following officers: President, John G. Moore; Vice-President, George William Ballou; Secretary, Charles F. Peck; General Manager, Thomas C. Purdy; Treasurer, H. B. Benson.

**Nashua & Lowell.**—At the annual meeting in Nashua, May 31, the following directors were chosen: Wm. H. Bailey, Cornelius V. Dearborn, Jeremiah W. White, Nashua, N. H.; A. M. Shaw, Lebanon, N. H.; Francis A. Brooks, Francis V. Parker, G. K. Richardson, Boston. The board elected Francis A. Brooks, President; Walter A. Lovering, Clerk; Charles B. Brooks, Treasurer. The road is leased to the Boston & Lowell Company.

**New York Central & Hudson River.**—The annual meeting in Albany, June 7, resulted in the re-election of the following board: W. H. Vanderbilt, Cornelius Vanderbilt, W. K. Vanderbilt, F. W. Vanderbilt, Augustus Schell, Samuel F. Barger, Chauncey M. Depew, James H. Rutter, J. Pierrepoint Morgan, Cyrus W. Field, New York; Chester W. Chapin, Springfield, Mass.; John Allen, Jr., Buffalo; James M. Marvin, Saratoga Springs. About sixty millions of stock were voted upon.

**New York & New England.**—The following circular from General Manager S. M. Felton, Jr., is dated Bos. on, May 31: "Mr. A. K. Mansfield is hereby appointed Superintendent of Motive Power, vice Geo. E. Boyden resigned."

"Mr. C. M. Bowman, Local Freight Agent at Boston, having been transferred to Hartford, the duties of his position will be performed by the General Agent, Mr. C. E. Paige. To take effect June 1."

**New York, Texas & Mexican.**—Mr. C. L. Leslie is General Superintendent and General Freight and Passenger Agent; Thomas F. Fisher, Auditor; J. W. Considine, Train-Master.

**Northern Central.**—Mr. A. O. Dayton is appointed Superintendent of Motive Power of the Canandaigua, Elmira, Sus-

quehanna and Shamokin division, in place of Mr. R. H. Soule, who has gone to the Pittsburgh, Cincinnati & St. Louis.

Mr. John M. Wallis succeeds Mr. Dayton as Superintendent of Motive Power of the Baltimore Division, with office in Baltimore. Mr. Dayton has been for some time in the Pennsylvania Railroad shops at Altoona.

**Old Colony Steamboat Co.**—At the annual meeting in Boston, June 6, the following directors were chosen: Francis B. Hayes, Silas Peirce, Boston; Charles T. Choate, Cambridge, Mass.; Frederick L. Ames, Easton, Mass.; Thomas J. Borden, John S. Brayton, Fall River, Mass.; Eliza W. Willard, Newport, R. I.; Cornelius N. Bliss, Wm. Borden, New York. The company is controlled by the Old Colony Railroad Company.

**Pacific Mail Steamship Co.**—The new board has elected officers as follows: President, J. B. Houston; Executive Committee, Russell Sage, Jay Gould, C. P. Huntington, Henry Hart; Auditing Committee, Sidney Dillon, C. P. Huntington, Edward Lauterbach.

**Pennsylvania.**—Mr. A. O. Dayton is appointed Superintendent of Motive Power of the Philadelphia & Erie Division, in place of Mr. R. H. Soule, who has been transferred to the Pittsburgh, Cincinnati & St. Louis. Office at Williamsport, Pa.

**Philadelphia & Atlantic City.**—Mr. F. S. Urie has been appointed Superintendent in place of Ellis Clark, resigned.

**Pittsburgh, Cincinnati & St. Louis.**—Mr. Richard H. Soule is appointed Superintendent of Motive Power, in place of Godfrey W. Rhodes, who has gone to the Chicago, Burlington & Quincy.

**Portland, Saco & Portsmouth.**—At the annual meeting in Kittery, Me., June 5, the following directors were chosen: Elijah B. Phillips, Alfred P. Rockwell, William B. Bacon, Samuel C. Lawrence, George P. King, G. E. B. Jackson, Stephen J. Young. The road is leased to the Eastern Company.

**Pullman Palace Car Co.**—The office of General Accountant is abolished, and that of Auditor created. Mr. C. H. Davie, heretofore General Accountant, and performing, in addition, the duties of Acting Auditor, is hereby appointed Auditor of the Company.

**Richmond & Allegheny.**—Mr. L. Cody has been appointed Road-Master of the Richmond Division, and Mr. A. J. Gillespie Acting Road-Master of the Allegheny Division.

**Rochester & Lake Ontario.**—This company has elected officers as follows: President, M. Filon; Vice-President, N. H. Galusha; Secretary and Treasurer, N. B. Ellison. Office in Rochester, N. Y.

**Rock Island & Mercer County.**—Mr. H. B. Ludlow is appointed Superintendent. He is also Assistant Superintendent of the Rock Island and Peoria Railroad.

**St. Paul, Minneapolis & Manitoba.**—Mr. Hubbard C. Atkins is appointed General Superintendent. He has been for some time Superintendent of the Chicago, La Crosse and Prairie du Chien divisions of the Chicago, Milwaukee & St. Paul road.

**St. Paul, Minneapolis & Sea Coast.**—The officers of this new company are: President, Alexander Ramsey, St. Paul, Minn.; Vice-President, J. Thayer, Clinton, Ia.; Treasurer, H. H. Sibley, St. Paul.

**Scioto Valley.**—The following circular from the office of Superintendent George Skinner is dated Columbus, O., May 30:

"Mr. Richard Bromley has this day been appointed Master Mechanic, in place of Mr. C. G. Browning, deceased, and will enter upon his duties June 1, 1882. Employes in the mechanical department will obey his orders."

**Tariff Commission.**—The President has nominated as members of the commission to revise the tariff, Hon. Wm. A. Wheeler, of New York, Chairman; John L. Hayes, of Massachusetts; Henry W. Oliver, Jr., of Pennsylvania; Austin M. Garland, of Illinois; Jacob Ambler, of Ohio; John S. Phelps, of Missouri; Robert P. Porter, of the District of Columbia; John W. H. Underwood, of Georgia; Duncan F. Kenner, of Louisiana.

There is no member of the Commission who can be said to represent the railroad interest. Mr. Wheeler was at one time a director and President of the Ogdenburg & Lake Champlain Company, but his career has been as a lawyer, Congressman and Vice-President. Mr. Kenner was once, we believe, a director of the New Orleans, Jackson & Great Northern, but he is a sugar-planter, and appointed to represent that interest.

**Texas & Pacific.**—Mr. J. S. Noble, heretofore Superintendent of the Transcontinental Division, has been appointed Superintendent of the Rio Grande Division. Mr. J. L. Thorn succeeds Mr. Noble as Superintendent of the Transcontinental Division.

**Trunk Lines Arbitrator.**—The presidents of the trunk lines have nominated Mr. Charles Francis Adams, Jr., as Arbitrator. The nomination has to be approved by the members of the Joint Executive Committee. No other appointment will be made, but it is understood that in special cases two other persons may be selected to act with Mr. Adams.

**United New Jersey.**—At the annual meeting in Trenton, May 30, the following directors were chosen: John C. Barron, Charles E. Green, John G. Stevens, Robert F. Stockton, Trenton, N. J.; Ashbel Welch, Lambertville, N. J.; A. L. Dennis, Newark, N. J.; Joseph D. Badle, Jersey City, N. J.; John Jacob Astor, Robert Lenox Kennedy, New York; Wm. Bucknell, Thomas McKean, Samuel Welsh, Philadelphia. Messrs. Green and Badle are new directors, replacing Benjamin Fish and Isaac W. Scudder, deceased. Mr. Charles A. Butts, of Burlington, is state director.

**Washington & Western.**—Mr. D. W. Nicholson has been appointed Master of Construction, with office at Alexandria, Va.

**Wheeling, Pittsburgh & Baltimore.**—At the annual meeting in Washington, Pa., May 27, the following officers were elected: J. B. Washington, President; Wm. Workman, W. W. Smith, H. M. Dougan, W. C. King, S. Spencer, John McCleave, directors; W. W. Smith, Secretary. The road is owned by the Baltimore & Ohio Company.

**Wilton.**—At the annual meeting in Nashua, N. H., the following directors were chosen: C. C. Boutwell, Wm. Ramsdell, John Reed, John A. Spalding, Solomon Spalding, Clerk; H. A. Whiting. The road is leased to the Boston & Lowell Company.

**Wisconsin & Minnesota.**—This company has re-elected C. L. Colby President and Treasurer; E. H. Abbot, Vice-President and Secretary; F. N. Finney, General Manager. The road is worked by the Wisconsin Central Company.

**Worcester.**—At the annual meeting in Snow Hill, Md., May 30, the following were chosen: President, Dr. George



W. Bishop; directors, Thomas Baumgardner, John Bodine, George W. Covington, Henderson Moore, N. L. McCready, George W. Purnell, Joseph R. Purnell, Thomas D. Parnell, John M. Robinson, E. K. Wilson. The road is worked by the Junction & Breakwater Company.

### PERSONAL.

—Mr. J. McC. Creighton, General Freight Agent of the Pennsylvania Railroad, is named as a candidate for Congressman-at Large from Pennsylvania.

—Mr. George S. Moulton, a well-known manufacturer and politician of Willimantic, Conn., died in that place June 7, aged 54 years. He was for some years a director of the New York & New England Company.

—Mr. Rush Cheney, one of the founders and chief owners of the great silk mills at South Manchester, Conn., died June 7, aged 67 years. He was a director of the South Manchester Railroad, which was built to serve his mills.

—Hon. Richard D. Rice, late a judge of the Maine Supreme Court, died last week in Augusta, Me., aged 72 years. He was for many years a director, and for several years President, of the Maine Central company, and was for a time a director and Vice-President of the Northern Pacific Company.

—A Philadelphia dispatch states that Mr. A. J. Cassatt has announced that he will resign his position as Vice-President of the Pennsylvania Railroad Company in October next. Mr. Cassatt is still comparatively a young man, and has earned for himself a high reputation. His retirement will be a serious loss to the company.

—Mr. Adam Norrie, formerly well known as an iron merchant in New York, died in that city June 7. He retired from active business some years ago, but had considerable interests in railroad property. He was a director in the Milwaukee, Lake Shore & Western, and was for a number of years a director of the New Jersey Central.

—Gen. Thomas F. Rosser, formerly Chief Engineer of the Canadian Pacific road, was recently arrested at Winnipeg, officers of the company charging him with wrongfully withholding from them certain maps and profiles. When the case came to trial, Gen. Rosser was at once discharged, the Court saying that the pretext for the charge was frivolous, and that he had done nothing deserving censure. Gen. Rosser will sue for damages for malicious prosecution.

—Mr. I. B. Futvoye, Superintendent of the Northern Division of the Central Vermont lines, was met at St. Johns, P. Q., May 27, by a number of friends, who presented him with a valuable gold watch, chain and seal, and with a silver tray and a check for \$100 for Mr. Futvoye. These were accompanied by an address; very complimentary to the recipient, who responded in appropriate terms. Mr. Futvoye began on the line 25 years ago as a chainman in the engineering corps, and has been with the road ever since, gradually rising to his present position.

—Mr. Albert Fink has finally declined the position of President of the Louisville & Nashville Company, giving his reasons in the following letter, addressed to Mr. C. C. Baldwin, now President of that company:

"I have not been able before this to give a final answer to the proposition of yourself and the directors of your road to accept the Presidency of your company, from which you desire to retire in case of my acceptance. The delay has not been from any fault of mine, and I regret it the more as I am now compelled to decline to accept the position. It is thought by the management of the railroads with which I am now connected that the severance of my connection with the work on hand at this time would seriously embarrass its progress, and I do not feel that I ought to take any steps that would have that effect. If I were only to consider my own personal feelings, I would have gladly accepted a position which would bring me back to a work with which I have been connected from its infancy, and upon which I have spent the best years of my life. The reflection, however, that you and other friends have overvalued the services which you expected me to render lessens the regret which I feel at having to disappoint you by declining the position. The practical management of your road is in the hands of able officers, and I have no doubt that they will reach the best possible results in the future, as they have in the past.

### TRAFFIC AND EARNINGS.

#### Railroad Earnings.

Earnings for various periods are reported as follows:

Five months ending May 31:				
	1888.	1881.	Inc. or Dec.	P. c.
Chi. & Eastern Ill.	\$681,895	\$615,578	I. \$66,317	10.7
Chi. & Northwestern	8,481,768	6,736,275	I. 1,745,493	26.0
Chi. St. P., M. & O.	1,982,691	1,396,072	I. 586,619	42.0
Denver & R. G.	2,614,171	1,971,527	I. 642,644	32.6
Long Island	715,500	634,506	I. 80,994	12.7
Louisville & Nashville	4,890,111	4,249,621	I. 640,490	15.2
Mobile & Ohio	755,155	981,382	D. 226,227	23.1
Northern Pacific	1,900,397	887,210	I. 1,013,187	114.2
Rochester & Pitts.	109,373	87,428	I. 21,945	25.2
St. L. & San Fran.	1,271,700	1,200,800	I. 70,900	5.9
St. P., Minn. & Man.	2,774,927	1,542,863	I. 1,232,064	79.8
Wabash, St. L. & P.	6,261,567	4,918,273	I. 1,343,294	27.0
Four months ending April 30:				
Clev., Col., Cin. & Ind.	\$1,135,521	\$1,307,998	D. \$172,477	13.2
Three months ending March 31:				
Union Pacific	\$6,403,500	\$5,111,460	I. \$1,292,040	25.3
Net earnings	2,336,931	1,656,683	I. 680,248	38.6
Month of April:				
Clev., Col., Cin. & Ind.	\$309,847	\$370,395	D. \$60,548	16.4
Month of May:				
Chi. & Eastern Ill.	\$143,113	\$117,296	I. \$25,817	22.1
Chi. & Northwestern	2,058,133	1,879,044	I. 179,089	9.5
Chi. St. P., M. & O.	406,960	350,127	I. 56,833	16.2
Col., H. V. & Toledo	239,817	113,529	I. 126,288	110.8
Denver & R. G.	614,298	514,767	I. 99,531	19.3
Long Island	179,482	157,073	I. 22,409	14.3
Louis & Nashv.	946,435	828,725	I. 117,710	14.2
Mobile & Ohio	137,645	145,803	D. 8,158	5.6
Northern Pacific	568,332	312,705	I. 255,627	81.7
Rochester & Pitts.	21,669	19,296	I. 2,373	12.5
St. L. & San Fran.	252,596	282,782	D. 30,186	10.6
St. P., Minn. & Man.	859,214	392,046	I. 467,168	137.3
Wabash, St. L. & P.	1,204,864	1,144,661	I. 60,203	5.2
Fourth week in May:				
Chi. & Gd. Trunk	\$35,509	\$31,127	I. \$4,382	14.1

#### Grain Movement.

For the week ending May 27 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past six years:

Northwestern shipments.				
Year.	Northwestern receipts.	Total.	By rail.	P. c. of Atlantic receipts.
1877	2,835,636	2,114,639	824,002	39.0
1878	6,556,185	5,045,362	2,004,090	39.7
1879	6,166,629	5,087,244	2,832,298	55.7
1880	8,808,172	6,190,472	1,605,114	25.9
1881	5,779,755	6,047,136	1,658,493	32.4
1882	4,425,909	2,833,441	1,281,646	56.1

Although the receipts of the Northwestern markets are smaller this year than in the corresponding week of any previous year since 1877, and about one-fourth less than last year, they are no less than 1,818,000 bushels (70 per cent.) more than the previous week this year and the largest since January. And the increase is general at nearly all the markets, though greatest at Chicago and Milwaukee, which received nearly twice as much as the week before. The increase is probably due to the greater leisure of the farmers, many of whom were able to leave their fields long enough to market some grain. The shipments of these markets were smaller than in any corresponding week since 1877 (and with that exception since 1873 at least) and 62 per cent. less than last year. The percentage shipped by rail was extraordinarily large, probably because the shipments were chiefly to interior points. The river shipments were 86,245 bushels and 3.8 per cent. of the whole, against 532,388 bushels and 8.8 per cent. of the whole in the corresponding week of last year. The receipts at Atlantic ports were the smallest for at least nine years, only about one-third as much as last year, and little more than the week before.

Of the Northwestern receipts Chicago had 57.8 per cent., St. Louis 15.6, Toledo 8, Milwaukee 7.2, Peoria 7.1, Detroit 3, Duluth 1.1, and Cleveland 0.2 per cent. The receipts at Chicago were the largest since the middle of October last. All the other places have had larger receipts in some weeks of this year.

Of the New York receipts New York had 56 per cent., Montreal 24.9, Philadelphia 6.3, Boston 5.3, Baltimore 5.1, New Orleans 1.9, and Portland 0.5 per cent. The notable feature is the large receipts at Montreal, which exceed those of all the other places except New York put together, and are nearly five times as great as the Baltimore receipts. They are larger than in any previous week since last June, and were equalled but twice in the whole year 1881, and are a larger proportion of the whole, we believe, than was ever reported before.

For the week ending May 30 the exports of grain from Atlantic ports were 1,163,070 bushels of grain and 69,410 barrels of flour this year, against 5,949,181 bushels of grain and 73,573 barrels of flour in the corresponding week of last year. For eight successive weeks the exports of these places have been:

	1882.	1881.	Decrease	P. c.
Flour, bbls.	436,433	790,650	354,217	44.6
Wheat, bu.	4,093,346	14,453,154	10,359,808	71.7
Corn, bu.	1,657,378	12,540,926	10,883,550	86.8

There is an increase in the exports of rye, but altogether they only amount to 447,574 bushels this year. Reducing flour to wheat, the decrease in the exports of this bread-stuff is nearly 12,000,000 in these eight weeks.

Receipts and shipments at Chicago and Milwaukee for the week ending June 4 were:

	1882.	1881.	1882.	1881.
Chicago	1,687,892	4,282,755	1,597,537	2,699,512
Milwaukee	255,029	639,290	87,495	203,530
Both	1,943,921	4,922,045	1,685,032	2,903,042

The decrease in the receipts is 60 per cent. and in the shipments 76 per cent. Last year at this time the receipts were extraordinarily large.

Receipts and shipments at Buffalo for the week ending June 4 were:

	1882.	1881.	1882.	1881.
By rail	197,700	471,000	453,000	1,297,500
By water	672,000	2,629,000	579,750	1,579,840
Total	869,700	3,100,000	1,032,750	2,877,340

The proportion of reduction in rail receipts and shipments is not far from that in lake receipts and canal shipments.

For the week ending June 3 receipts at four Eastern ports were:

<i>Bushels:</i>	New York.	Boston.	Phila.	Baltimore.	Total.
1882.....	1,905,679	61,405	144,650	112,151	2,223,885
1881.....	2,595,347	551,355	1,248,000	1,290,030	5,685,332
1880.....	3,275,078	288,267	980,200	1,011,554	5,555,099
<i>P. c. of total:</i>					
1882.....	85.7	2.8	6.5	5.0	100.0
1881.....	45.6	9.7	22.0	22.7	100.0
1880.....	59.0	5.2	17.6	18.2	100.0

The receipts reported at Boston this year are so phenomenally small as to lead one to suspect an error in them.

Philadelphia and Baltimore together received 11.5 per cent. of the whole this year, against 44.7 last year and 35.8 per cent. in 1880. Of the receipts at New York, 1,191,754 bushels (62½ per cent. of the whole) were by water this year, against 1,898,964 (72½ per cent.) last year. The rail receipts were a trifle larger this year than last.

Baltimore grain receipts in May were as follows, flour in barrels and grain in bushels, flour being reduced to wheat in the totals:

	1882.	1881.	Decrease.	P. c.
Flour	92,741	106,302	13,561	12.6
Grain	661,516	1,753,021	1,091,505	62.3
Total bushels	1,125,221	2,284,531	1,159,310	50.7

Exports for the month this year were 27,364 barrels flour and 378,717 bushels grain.

Buffalo grain receipts to May 31 were as follows, flour in barrels and grain in bushels:

	1882.	1881.	1882.	1881.
By lake	233,479	77,078	10,408,459	7,473,089
By rail	260,620	351,400	9,717,100	11,723,700
Total	494,099	428,478	20,125,559	19,196,789

Rail receipts this year were 52.2 per cent. of the flour and 48.3 per cent. of the grain. The total receipts of flour show an increase of 1.6 per cent., and of grain an increase of 4.8 per cent.

Shipments eastward of grain received by lake for the same period, were as follows, in bushels:

	1882.	1881.	Inc. or Dec.	P. c.
By canal	6,198,729	3,118,050	I. 3,080,679	98.8
By rail	2,237,104	2,599,214	D. 362,110	13.9
Total	8,435,833	5,717,264	I. 2,718,569	47.6
Per cent. by rail	29.5	45.5	D. 19.0	

The canal opened April 11 this year, and May 17, in 1881, giving 36 days more of navigation this year. Last year the canal had been opened but two weeks on May 31, so that the shipments were relatively very much larger than this year.

The decline in the receipts in May is especially great in wheat. In Chicago the wheat receipts were but about one-third as great as in 1881, and not one-tenth as great as in 1880. At both places the receipts of wheat and of flour reduced to bushels have been:

	1879.	1880.	1881.	1882.
Wheat	4,247,513	3,742,797	1,672,626	590,747
Flour	2,181,640	1,808,890	3,203,409	2,392,195
Total	6,429,153	5,551,687	4,806,035	2,982,942

Until last year much more wheat than flour was received. In 1880 there was a great increase in the number and capacity of mills in the Northwest, so that in May last year the

receipts of flour were twice those of wheat, and this year they were four times as great as the wheat receipts. The corn receipts were a third larger this year than last, but 48½ per cent. less than in 1880.

### Coal Movement.

Coal tonnages are reported as follows for the week ending May 27:

	1882.	1881.	Inc. or Dec.	P. c.
Anthracite	341,482	360,393	D. 18,911	5.2
Semi-bituminous	79,910	.....	.....	.....
Bituminous, Penna.	67,963	.....	.....	.....
Coke, Penna.	54,548	.....	.....	.....

The anthracite companies have made an increase of from 10 to 15 cents per ton in their list prices for June. This, however, has had no effect on the market, and the actual prices at which sales are made continue unchanged.

There has been but little change in the Cumberland Region. A few foreign miners have been brought in, but not enough as yet to affect the situation much.

The coal tonnage of the Pennsylvania Railroad for the week ending May 27 was: Coal, 163,073; coke, 54,540; total, 217,621 tons. The total tonnage this year to May 27 was 4,464,463 tons.

The coal tonnage of the New York canals from the opening to May 31 was as follows:

	1882.	1881.	Increase.	P. c.
Anthracite	189,045	83,523	105,522	126.4
Bituminous	31,529	15,713	15,816	100.1
Total	220,574	99,236	121,338	121.5

The canals opened April 11 this year and May 17 last year.

The shipments of the Tennessee Coal, Iron & Railroad Co. from its mines in May were 12,561 tons of coal and 6,490 tons of coke; total shipments to May 31 were 61,204 tons of coal and 45,857 tons of coke.

### Canal Traffic.

The business of the Erie Canal for the week ending May 31 is reported as follows by the Canal Auditor:

	1882.	1881.	Decrease	P. c.
Tons shipped	220,817	292,851	72,034	24.3
Miles cleared by boats	289,742	379,413	89,671	23.6
Tolls	\$25,944	\$43,765	\$17,821	40.7

This is the first week of the season during which the whole of the canals were open the entire week last year. The decrease in tolls, it will be seen, is much greater than that in tonnage on mileage of boats, indicating that a large proportion of the freight is that which is free from tolls; but the table of the articles shipped shows that this was not the case, only 10,032 tons of articles on the free list having been shipped this year, against 11,129 last year.

The principal articles shipped during the week were, in tons:

	1882.	1881.	Inc. or Dec.	P. c.
Lumber and timber	84,781	93,344	D. 8,563	9.3
Grain	32,405	82,992	D. 50,587	61.0
Iron and iron ore	18,008	31,736	D. 13,728	43.2
Salt	2,861	3,818	D. 957	25.0
Coal	55,503	46,950	I. 8,553	18.2
Stone, lime and clay	13,403	12,566	I. 837	6.7
Sugar and molasses	965	1,960	D. 995	44.1
Dom. woolsens and cottons	54	578	D. 522	90.0

The rail rates on grain were about the same both years (but with considerable cutting of rates last year), so that the decrease in this important staple of canal traffic is due to the lighter movement to the seaboard. Most that comes forward now goes to interior points which the canal does not reach. The lumber shipments, though less than last year, are large. The shipments of iron ore are but little less than last year, and the great reduction is nearly all in pig and manufactured iron, and is probably due to the extremely low rates to the West at which the railroads have contracted to carry until July, and to these low rail rates must be attributed the great decrease in sugar and molasses and domestic woolsens and cottons—articles which never make up any considerable share of the canal freight, and are noted for the sake of showing the effect of the low rail rates.

### Lake Superior Iron Ore.

Shipments of iron ore from the Lake Superior Region up to May 31 are reported as follows by the Marquette Mining Journal:

	1882.	1881.	Increase.	P. c.
L'Anse	8,186	2,793	5,393	193.1
Marquette	164,376	45,063	119,313	264.8
Escanaba	316,066	159,951	156,115	97.6
St. Ignace	2,512	.....	2,512	.....
Total	491,140	207,807	283,333	136.3

St. Ignace is the new port at the terminus of the Detroit, Mackinac & Marquette road, on the Straits of Mackinaw. This road was not completed last year.

Of the shipments from Escanaba, 123,156 tons were from the Marquette District and 193,910 tons from the Menominee District.

In addition to the lake shipments, 12,042 tons of ore were delivered to local points. There were 492 tons of pig iron shipped from Marquette and 783 tons from St. Ignace.

Part of the large increase is due to the earlier opening of navigation this year.



not more than 60 adults or 80 children to the coach, and in cases where the party will be composed of both adults and children the latter will be counted at the ratio of four children to three adults. No special train of less than three coaches will be chartered. No extra charge will be made for engine or baggage car. No charge of less than \$100 will be made for any chartered train. The various bridge arbitrators will be added to the rates. No charge will be made for mileage on cars for the distance they may in some cases have to be hauled before being used. No coaches will under any circumstances be chartered to a convention or meeting held on the line to which by special arrangement the company has granted excursion rates to single passengers. This will apply to fairs, political conventions and gatherings of all kinds to which the company sells tickets at excursion rates.

#### Wisconsin Lumber.

A dispatch from Milwaukee, May 30, says: "The lumber traffic of Northern Wisconsin, for which the roads centering in Milwaukee have been and are competing, and for a share of which new lines are being built, is to-day larger by far than was ever anticipated by those who first became interested in the traffic. During the past year fully \$10,000,000 have been put into this business by Milwaukee capitalists. George Burham alone has invested \$1,500,000 in mills and timber in the vicinity of Butternut. Col. W. H. Jacobs, Mr. Norrie, the firm of Wells, Ludington & Van Shaick, and Senator Burrows have also made enormous investments along the Wisconsin Central and the Milwaukee, Lake Shore & Western. The success of these various lumbering enterprises is assured, considering the fact that in Northern Wisconsin there is now standing on White River and its tributaries 600,000,000 feet of merchantable pine, on Fish Creek and its tributaries 150,000,000, on the Superior Bay shore and islands 400,000,000, on Bad River, tributary to Ashland Bay, 250,000,000, and with outstanding pine not estimated enough to swell the total in Wisconsin to 2,000,000,000 feet. To this must be added the pine on the lake coast of Minnesota tributary to Lake Superior ports of nearly as much more. This is a vast amount of pine timber, but when the fact that Chicago alone consumes 3,000,000,000 feet of lumber per annum is taken into consideration, the drain upon the timber resources of the country is more fully realized. During the past fifteen years the Michigan pineries have yielded 35,000,000,000 feet of lumber, and it is estimated that that state has not to exceed \$40,000,000,000 feet left. Wisconsin is estimated to contain as much more, while Minnesota has not to exceed 12,000,000,000 feet left in her forests."

#### A Colorado Passenger War.

A local war on passenger rates between Denver and Pueblo has broken out between the Denver & Rio Grande and the new Denver & New Orleans roads. At latest dates the rates between the two cities had been reduced from \$6 to \$2.50 and then to \$1. There was no immediate prospect of a settlement.

#### Lumber Rates.

A conference was held in Chicago, May 31, between officers of the roads running out of that city and representatives of the lumber trade. The lumber men occupied two hours in telling what their grievances were, namely, that the rates between the Mississippi and Missouri rivers and Chicago were not properly based.

The railroad men listened, and then adjourned until 3:30 o'clock, asking the lumbermen to meet meanwhile and agree upon the differential rates. The Lumber Committee, consisting of five, could not agree, so that when the railroad men met again a minority and a majority report were presented. The railroad men considered both reports, but could not agree, and adjourned.

On the following day a meeting of the Southwestern Railway Association was held. There were present Messrs. C. H. Chappell and H. H. Cortright, Chicago & Alton; E. P. Ripley and Paul Morton, Burlington; R. R. Cable and J. T. Sanford, Rock Island; J. B. Carson and W. H. McDoel, Hannibal & St. Joseph; J. F. Barnard and G. H. Crosby, Kansas City, St. Joseph & Council Bluffs; S. Frink, Missouri Pacific; John C. Gault and A. C. Bird, Wabash.

Commissioner Midgley presided. Messrs. H. C. Wicker and C. G. Eddy, of the Northwestern road, were also present to take part in the discussion relative to lumber rates. The reports agreed upon by the lumber men were discussed, and it was decided that the maximum difference from Upper Mississippi River points to Missouri River points shall be 3½ cents per 100 lbs. higher than the rate from St. Louis to Missouri River points. There being five divisions of territory, there was some misunderstanding as to how the prices shall be scaled down and applied to each section. This question was finally referred to Commissioner Midgley with power to act. He is also to deal upon the differences between Chicago and St. Louis. It was also agreed to make the rate from St. Louis to Missouri River points 15 cents per 100 lbs. instead of 13½ cents as at present. This will form the basis for the other rates.

#### Petroleum Exports.

Petroleum exports for the five months from Jan. 1 to May 27 have been, in gallons, for five successive years:

1878.	1879.	1880.	1881.	1872.
91,279,878	114,287,577	124,403,850	134,202,012	183,598,151

The exports this year were thus 37 per cent. more than last year, 47½ per cent. more than in 1880, 61 per cent. more than in 1879 and 101 per cent. more than in 1878. Exports are stimulated this year by extremely low prices, in spite of which the stock on hand is now equal to about a whole year's production. The price at the wells is only about 1½ cents per gallon (57 cents per barrel of 42 gallons), which is lower than ever before, we believe.

The percentage of these exports by the leading ports has been:

	1882.	1881.	1880.	1879.
New York	81.1	82.7	77.2	70.9
Philadelphia	14.7	12.2	16.5	17.6
Baltimore	2.8	2.5	5.5	9.0
Boston	1.3	2.5	0.8	1.9
Richmond	0.1	0.1	..	0.6

New York's gain since last year has been 38,000,000 gallons; Philadelphia's, 10,600,000.

#### Hog Packing and Provision Exports.

From March 1 to May 27 the number of hogs packed in the Northwest and the seaboard receipts are reported as follows:

	1882.	1881.	Inc. or Dec.	P. c.
Northwest packing	1,205,000	1,130,000	I. 75,000	6.6
Seaboard receipts	522,934	548,775	D. 25,841	4.7
Total	1,727,934	1,678,775	I. 49,159	5.0

The exports of product from Nov. 1 to May 27 have been:

	1880-81.	1881-82.	Decrease.	P. c.
Pounds	462,716,056	743,223,170	280,507,114	37.7

The shipments of product from Chicago in the same time were:

	1882.	1881.	Decrease.	P. c.
Pounds	609,596,403	724,962,842	115,366,439	15.9

The Chicago shipments in previous years have usually just about equalled the total exports; this year they are nearly a third more than the exports. The production has been required for home consumption to an unusual extent.

#### May Receipts at Chicago and Milwaukee.

Receipts in May for four successive years have been:

	1879.	1880.	1881.	1882.
Chicago:				
Grain, bush.	11,461,258	16,629,411	9,218,227	8,772,797
Flour, bbls.	282,879	219,100	384,545	254,236
Hogs, No.	547,913	561,522	468,395	525,550

	1879.	1880.	1881.	1882.
Milwaukee:				
Grain, bush.	2,664,293	1,870,634	1,442,019	930,065
Flour, bbls.	201,930	182,869	327,337	277,363
Hogs, No.	17,705	20,962	24,252	40,286

Grain receipts were but little less at Chicago, but a third less at Milwaukee than last year, but little more than half as great as in 1880; the decrease in flour from last year is 33 per cent. at Chicago and 15 per cent. at Milwaukee, but the receipts are larger than in any year previous to 1880. Milwaukee, it is noticeable, received more flour than Chicago this year, though not one-ninth as much grain. Indeed, Milwaukee's flour receipts were equivalent to 1,244,133 bushels of wheat, while its grain receipts were but 930,065 bushels.

The receipts of hogs are 15 per cent. more than last year, and nearly the same as in the other two years.

Reducing flour to grain, the aggregate receipts of the two places were:

	1879.	1880.	1881.	1882.
Bushels	10,317,191	20,308,905	13,863,715	12,095,057

This year the receipts were 13 per cent. less than last year, 40½ per cent. less than in 1880, and 26 per cent. less than in 1879.

For four successive months these flour and grain receipts at Chicago and Milwaukee have been:

	1879.	1880.	1881.	1882.
February	8,553,023	7,567,491	7,850,527	9,609,557
March	9,834,277	11,638,627	8,402,159	7,723,763
April	9,599,157	8,253,871	10,065,994	7,882,873
May	16,317,191	20,308,905	13,863,715	12,095,057

There is usually a great increase in May over the receipts of the previous months of the year, and this was the case this year, but not to the usual extent last year, when the heavy shipments usual in May came in June, when the receipts were 24,612,878 bushels, or nearly twice as great as in May.

Receipts at the two places the first week in June were:

	1879.	1880.	1881.	1882.
Grain, bu.	4,771,755	4,446,654	4,820,890	2,106,838
Flour, bbls.	122,072	100,970	166,801	150,066
Hogs, No.	132,305	107,687	141,748	142,037

This shows a decrease of 56 per cent. in grain and of 10 per cent. in flour receipts, while the hog receipts were larger than in any previous year.

#### Equalizing Through Rates.

A circular signed by the general passenger agents of the Eastern trunk lines, and addressed to the general passenger agents of the Western trunk lines, says:

"Several connections of the trunk lines having complained that the fares from the seaboard to Missouri River points via Chicago (based on the 'war rates' between Chicago and Missouri River), are less than via other routes, and asked the trunk lines to equalize the through rates, it is now proposed to do this by selling limited tickets from seaboard to Missouri River points by all routes at full limited tariff rates and to issue close limit rebate orders, redeemable at terminal offices, Missouri River. For example, we would sell at \$32.40 New York to Kansas City via all routes, with rebate draft for \$7.40, with the understanding that the trunk lines will report regular proportions of \$32.40 through to Kansas City, and the lines beyond the trunk lines shall arrange with the Missouri River terminal lines to stand their pro rata share of the amount of our rebate orders redeemed by them from passengers.

"This seems to us to be the only way in which we can consistently meet the wishes of our connections. Does it meet with your approval?"

"Please transmit your reply direct to Mr. R. T. Brydon, Secretary, 346 Broadway, New York, and the subject will be taken up at an early meeting."

#### St. Louis Bridge Toll.

The general passenger agents of the Ohio & Mississippi, Chicago & Alton, Chicago, Burlington & Quincy, Indianapolis & St. Louis and Vandalia Lines, have issued the following circular to connecting lines: "Having been notified by the St. Louis Bridge Company of an advance of 25 cents each (from 25 to 50 cents) on all second-class and immigrant tickets, between East St. Louis and St. Louis, we hereby give notice that, commencing with sales of June 1, we shall, until further notice, require an arbitrary on such tickets of 50 cents each, which amount is to be deducted before dividing on usual basis, and afterward added to the amount otherwise accruing to our lines terminating at St. Louis."

#### RAILROAD LAW.

##### Limited Tickets in New York.

The following is a report of a case recently decided in the New York Court of Appeals, as given in the New York Tribune:

Mr. Auerbach, being in St. Louis on Sept. 21, 1877, purchased of the Ohio & Mississippi Railway Company a ticket for a passage from St. Louis, over the several railroads mentioned on coupons annexed to the ticket, to the city of New York. It was specified on the ticket that it was "good" for one continuous passage to the point named "in coupon attached" that in selling the ticket for passage over other roads the company making the sale acted only as agent for such other road and assumed no responsibility beyond its own line; that the holder of the ticket agreed with the respective companies over whose roads he was to be carried to use the ticket on or before Sept. 26, 1877, and if he refused to comply with such agreement either of the companies might refuse to accept the ticket or any coupons thereof. The material part of the last coupon was as follows:

"Issued by Ohio & Mississippi Railway on account of New York Central & Hudson River Railroad; one first-class passage Buffalo to New York."

Wishing to stop at Rochester, Mr. Auerbach purchased a ticket of the Central Railroad from Buffalo to Rochester, and used the ticket in going from Buffalo to Rochester. On the afternoon of Sept. 26 he got on a train at Rochester to complete his trip to New York. He then presented his original ticket, with the one coupon attached, to the conductor, and it was accepted by him, and was recognized as a proper ticket and punched several times until the plaintiff reached Hudson, about 8 or 4 o'clock on the morning of Sept. 27, when the conductor declined to recognize the ticket on the ground that the time had run out, and demanded \$3 fare to New York. Mr. Auerbach declined to pay, and the conductor ejected him with force from the car.

The trial judge nonsuited Mr. Auerbach on the ground

that the ticket entitled him to a continuous passage from Buffalo to New York and not from any intermediate point to New York. The General Term affirmed the nonsuit upon the ground that although the plaintiff began his passage upon Sept. 26 he could not continue it after that date on that ticket. The Court of Appeals holds that upon neither ground should he have been nonsuited. "The plaintiff," says Judge Earl in his opinion, "was bound to a continuous passage over the defendant's road; that is, the plaintiff could not enter one train of the defendant's cars and then leave it and subsequently take another car and complete his journey. He was not, however, bound to commence his passage at Buffalo. He could commence it at Rochester, or Albany, or any other point between Buffalo and New York, and then make it continuous. . . . When the plaintiff entered the train at Rochester on the afternoon of the 26th of Sept. and presented his ticket and it was accepted and punched, it was then used within the meaning of the contract. It could then have been taken up. So far as the plaintiff was concerned, it had then performed its office. It was thereafter left with him, not for his convenience, but under regulations of the defendant for its convenience, that it might know that his passage had been paid for. The contract did not specify that the passage should be completed on or before the 26th inst., but that the ticket should be used on or before that day, and that it was so used it seems to us too clear for dispute." A new trial was granted.

#### THE SCRAP HEAP.

##### Fast Time.

The Boston and Montreal fast express, on the Central Vermont, the 24th, made the run from St. Albans to White River Junction, 120 miles, in 2½ hours, and made seven stops. The engine which made this remarkable time was the "J. M. Foss," Thomas Buck, engineer. Allowing a loss of five minutes for each stop, the time made was only a very little less than a mile a minute.—*St. Albans Messenger*, June 2.

A train on the Pennsylvania Railroad is reported to have made the run of 80 miles from Jersey City to Philadelphia in 80 minutes one day last week. The train was drawn by one of the Class K engines.

The Shore Line express which left Boston on June 5, by way of the Boston & Providence Railroad, made the distance between Boston and New York—234 miles—in 5 hours and 54 minutes, or one minute ahead of schedule time. The following was the running time between Providence and Stonington: Leaving Providence at 2 o'clock, East Greenwich was passed at 2:17, Wickford Junction at 2:24, Kingston at 2:33, Westerly at 2:50, arriving at Stonington, where the first stop was made, at 3:01 right on time, a distance of 49½ miles. The same speed was noticeable on the entire length of the line. The actual time gained in reaching New York from Boston, compared with the old schedule, was 47 minutes. This is the first trip ever made from Boston to Stonington with only one stop, and from Providence to Stonington in one hour.

##### Canadian Canal Contracts.

Bids will be received by Mr. F. Braun, Secretary of the Department of Railways and Canals at Ottawa, Canada, until June 27, for the construction of the Murray Canal to connect the headquarters of the Bay of Quinte with Presque Harbor, Lake Ontario. Maps, specifications, etc., can be seen at the office in Ottawa or at Brighton, Ont.

Mr. Braun will also receive until July 1, bids for altering and lengthening a lock on the old Welland Canal. Specifications, etc., can be seen at the Resident Engineer's office, Thorold, Ont., after June 27.

Mr. Braun will also receive bids until July 5, for the construction of two lift locks, bridge piers, and other works at Fenelon Falls; also, the construction of a lock at Buckhorn Rapids, and for the construction of three locks, a dam and bridge piers at Burleigh Falls on the Trent River. The works at each of these places will be let separately. Specifications, etc., can be seen after June 21, at the engineer's offices at Fenelon Falls and Peterboro, Ont., or at the office in Ottawa.

#### OLD AND NEW ROADS.

**Baltimore & Delta.**—Tracklaying is in progress from the present terminus at Towson, Md., northward. A new engine has been received and put upon the road.

**Burlington & Northwestern.**—This company has completed and opened for business a branch from Winfield, Ia., 34 miles from Burlington, west to Coppack, 16 miles. The company now operates 68 miles of road.

**Camden & Atlantic.**—It is proposed to build a branch from this road to Gibbsboro, N. J., running through Lakeside Park. It would be about four miles long.

**Canadian Pacific.**—A dispatch from Toronto, Ont., says: "The rumor that the Canadian Pacific Railway syndicate has sold five million acres in the Northwest, with a half interest in all its town and village sites, to a subordinate syndicate has been confirmed. The price is said to be \$3 per acre."

**Chesapeake & Ohio.**—This company has closed a contract with Hazeltine & Arman, of New York, to build a grain elevator of 1,500,000 bushels capacity at Newport News. Work is to begin at once.

**Chesapeake & Ohio Canal.**—At the annual meeting in Annapolis, June 5, resolutions providing for a reduction in salaries, stricter accounting and more economical management were offered. They led to a long and heated discussion, and were finally voted down. The old board were nearly all re-elected.

**Chesapeake, Ohio & Southwestern.**—On the gap between the two ends of this line grading is now nearly all finished. On the Memphis end track has been laid from the old terminus at Covington, Tenn., north seven miles to the Hatchie River. Between that place and Dyersburg, the end of the northern section, there is a gap of 32 miles, which the contractors hope to close in July.

**Chicago, Burlington & Quincy.**—This company has made arrangements to build a grain elevator of 1,000,000 bushels capacity in Peoria.

The company has issued the following circular to its stockholders: "In carrying out the general policy of protecting the territory contiguous to our line, and providing a system of branches for the same out of roads which might otherwise have become competitors, your directors have now obtained full control and substantial ownership of the following properties: The Chicago & Iowa Railroad, extending from Aurora to Rockford and Forrester, about 104 miles; the St. Louis, Keokuk & Northwestern Railroad and its adjunct, the Keokuk & Northwestern Railroad, extending from Mount Pleasant, Ia., to St. Peters, Mo., a distance of about 184 miles. In pursuance of the same general policy, the following roads are now under construction: The Humeston & Shenandoah Railroad (this is owned in



common with the Wabash, St. Louis & Pacific Railway Company) one-half of about 100 miles in length. The Joliet, Rockford & Northern Railroad, a link connecting three of our Illinois lines, of about 24 miles in length. The Ottumwa & Kirkville Railroad, a short coal road in Iowa, of about 10 miles. The acquisition and construction of these properties has involved a cash outlay of over \$6,500,000. In view of this expenditure, your directors have deemed it proper and expedient for the company to exercise the power to increase its capital stock conferred by its charter, the authority to do which was prospectively conferred to its directors at a meeting of the company held on the 24th day of March, 1880. Your directors have therefore voted to cause such increase to be made, to the amount of 10 per cent. of the number of shares on record June 30, 1882, and to offer the same in the first instance to the shareholders of the company. The opportunity is therefore offered to the stockholders of record June 30, 1882, to subscribe to an issue of stock at par, equal in amount to one-tenth of their respective holdings; that is to say, the privilege of subscribing to one share of stock at par will attach to 10 shares of Chicago, Burlington & Quincy Railroad Company's stock. The books of the company will close June 30, 1882, and remain closed until July 10. The right to subscribe will expire July 31, 1882."

**Chicago, Milwaukee & St. Paul.**—This company has been making extensive improvements at Elgin, Ill., on the Chicago & Pacific Division. An extensive yard has been made, about half a mile of trestle filled in and an iron bridge built.

It is said that work will soon be begun on the extension of the Monroe Branch from Shullsburg, Wis., to Galena, Ill. It is also said that this branch will be extended from Galena down the Mississippi to Savanna. For most of the distance there is an old graded road-bed.

At the annual meeting in Milwaukee, June 5, the stockholders voted to authorize the increase of both common and preferred by 20 per cent. of the present amount. The new issue will amount to about \$6,400,000. One-half of the new stock will be distributed to stockholders as a dividend, to represent earnings used in construction; the remainder is to be sold at par, for cash, the proceeds to be used for completing new roads now in progress, completing the new shops at Milwaukee, improvements of the road and similar purposes.

**Chicago & Northwestern.**—A dispatch from Chicago, June 2, says: "With reference to the proposed change from Pullman to Wagner sleeping cars on this road, the officers of the road say that the contract with the Pullman Company expires Aug. 1 next. Under the contract the railroad company will purchase the 28 cars of the Pullman Company now on its lines. These will be slightly altered, and will be run by the Wagner Company after the date mentioned."

A mortgage on the 92 miles of narrow-gauge road from Galena, Ill., to Woodman, Wis., with its branches, 92 miles in all, has been recorded. It is for \$920,000, and is for the purpose of making necessary improvements and changing the division from 3 ft. to standard gauge.

This company will, it is stated, before determining on any new projects, complete the construction of the lines commenced last year, and upon which considerable work has been performed. The construction to be finished will include the extension of the Dakota Central Railroad from Watertown to Redfield, in the James River Valley, 70 miles; the extension of the Sioux Valley line from Volga northward, 30 miles; the extension of the Menominee River line, in the peninsula of Michigan, to the ore deposits at Iron River, 19 miles; the extension of the Escanaba & Lake Superior road, from a point on the existing line to the iron mines at Felch Mountain, 36 miles, and the extension of the Crystal Falls Branch, 18 miles. These various extensions will be completed during the present year.

**Chicago, St. Louis & New Orleans.**—Under the lease of this road to the Illinois Central Company, which will take effect July 1, provides for the payment by the lessee of 4 per cent. upon the \$10,000,000 capital stock, most of which it owns. The lessee will also guarantee the consolidated 5 per cent. bonds, and to provide for the retirement of previous issues of bonds as they fall due, by issuing a corresponding amount of consolidated bonds. The issue of the last-named bond is limited to \$18,000,000.

**Chicago, Texas & Mexican Central.**—A dispatch from Dallas, Tex., says: "Mr. A. F. Bennett, Secretary and Treasurer of the Chicago, Texas & Mexican Central Railroad, states that the rumor of the sale of the road to the Gulf, Colorado & Santa Fe is without foundation. He is said to have brought enough money to pay off all indebtedness of the road, which is about \$100,000."

**Cincinnati, Wabash & Michigan.**—The extension from Goshen, Ind., to Niles, Mich., 28 miles, is now nearly all ballasted, and will be ready for trains in a few days. It will probably be opened for travel about June 15.

**Concord.**—In Concord, N. H., June 3, counsel for this company served notice upon the plaintiffs in the Burke suit that application would be made to the Court of June 6 to discharge the injunction issued in the cause and to dismiss the bill, because plaintiffs have filed no reply to defendants' answers, nor taken any evidence or other steps in prosecution of the cause; and, if this application shall not be granted, the Concord Railroad Corporation will move that said injunction be modified by striking out all thereof which relates to any persons or corporations not parties to the suit, and also that it be so modified as not to conflict with the operation of the business connection entered into between the Concord Railroad Corporation and the Boston & Lowell Railroad Corporation by their votes of April 11, 1882, taking effect May 1, 1882.

**Concord & Claremont.**—At the annual meeting, May 31, the stockholders voted to accept the act of the New Hampshire Legislature authorizing the company to consolidate with the Northern Railroad Company, and instructed the directors to take all necessary action to complete the consolidation. The Northern Company already owns a majority of the stock and guarantees the bonds of this company.

**Denver & Rio Grande.**—Reports of an alliance between this company and the Chicago, Burlington & Quincy have been renewed, owing chiefly to the laying of a new track at Denver to connect the two roads.

From June 1 the operated lines of this company will be divided as follows:

First Division.—First District, Denver to Pueblo; Second District, Pueblo to Salida; Third District, Pueblo to Alamosa; Manitou, Silver Cliff and El Moro branches.

Second Division.—San Juan District, Alamosa to Durango; New Mexico District, Antonito to Española; Del Norte and Silverton branches; Alamosa station and yard will be under the control of the Superintendent of the Second Division.

Third Division.—Leadville District, Salida to Leadville; Blue and Eagle River branches.

Fourth Division.—Gunnison District, Salida to Gunnison; Maysville, San Luis and Crested Butte branches; Salida

station and yard will be under the control of the Superintendent of the Fourth Division.

**Fall River.**—This company has leased its road to the Old Colony Company for 99 years. The rental is to be 30 per cent. of the gross earnings, the lessee granting 5 per cent. interest on \$200,000 bonds.

**Fitchburg.**—The work of improving the Vermont & Massachusetts Division between Royalston and Greenfield goes steadily forward. In addition to the section of double track already laid, the road in now doubled from Lake Pleasant to Miller's Falls. The foundations for the new depot at the latter place, to supply the place of the station that was burned in the winter, are laid, and the change in the grading of the New London Northern and Fitchburg roads, by which the former road is made to pass over the latter, avoiding the present grade crossing, will soon be completed. The long, deep cuts which are designed, the one near Erving and the other at Pequig, to save bridges by straightening the course of Miller's River, will probably be finished before snow flies. At Pequig the river is already made to divide its waters between the old channel and the cut. Two bridges will be saved at each of the cuts, and by a further straightening of the road this side of Pequig station one new bridge will take the place of four old ones, so that in the completion of this scheme of improvement no less than seven of the numerous bridges between Royalston and Miller's Falls will be removed altogether.

**Galveston & Eagle Pass Air Line.**—This company has executed a mortgage on its projected line, which is to run from Galveston, Tex., to Eagle Pass on the Rio Grande, about 350 miles. The mortgage is to secure a proposed issue of 40-year 6 per cent. bonds at the rate of \$12,000 per mile, or \$4,200,000 in all.

**Grand Rapids & Indiana.**—At a meeting held May 30 the board decided to negotiate a loan of \$500,000 for the purpose of paying for the extension from Petoskey, Mich., to the Straits of Mackinaw. Work on the extension is to be pushed.

**Grand Trunk and the Great Western.**—The official notices published at Ottawa in pursuance of law give the following statement of the objects to be effected by the proposed agreement between the Grand Trunk and the Great Western companies:

"1. The consolidation of the undertakings of the two existing companies into one undertaking under a single company.

"2. The taking over by the single company of the liabilities of the two existing companies, but without prejudice to the rights of creditors and other persons having claims against the undertaking or portions of the undertaking of each of the two existing companies.

"3. The retention of the stock of each of the two existing companies as a separate distinct class of stock under the titles of Great Western stock, representing the existing stock of the Great Western Company, and Grand Trunk stock, representing the existing stock of the Grand Trunk Company.

"4. The division of the net profits of the consolidated undertaking, after payment of interest on borrowed capital, rents of leased lines, and all other outgoings between the two classes of stocks as follows, namely: 30 per cent. to Great Western stock, and 70 per cent. to Grand Trunk stock.

"5. But if the 30 per cent. appropriated to Great Western stock is in any year insufficient to pay 5 per cent. per annum on the preference portion and 3 per cent. per annum on the ordinary portion of that stock, then the deficiency is to be made good out of the 70 per cent. appropriated to Grand Trunk stock, and all sums paid to make good such deficiency to be recouped out of any surplus remaining in any subsequent year of the 30 per cent. after discharging interest at the before-mentioned rates on the Great Western stock.

"6. One-third, as nearly as may be, of the directors of the consolidated undertaking to be qualified by holding Great Western stock, and the other two-thirds by holding Grand Trunk stock.

"7. The making all proper arrangements consequent on the consolidation in manner above proposed of the two undertakings, and for preserving the rights of the holders of each class of stock, regulating the number and time and mode of election and qualification of directors, the voting powers and other matters required to be provided for in relation to the affairs of the two existing companies, and the rights of the stockholders and shareholders therein, or in the consolidated undertaking, or otherwise arising out of the consolidation, including the appointment of trustees to receive and distribute moneys applicable to the Great Western stock."

The shareholders' meetings of the two companies to vote on the ratification of the agreement are to be held in London, England June 29.

**Gulf, Colorado & Santa Fe.**—This company is looking for a northern outlet, not being on friendly terms with the two lines from Texas to St. Louis, both of which are controlled by the Gould interest. One connection will be made when the Texas & St. Louis road is completed, and it is reported that the company will extend its road to McKinney, and then try to secure the building of a line across the Indian Territory to a connection with some of the Kansas roads. There are many difficulties in the way of this plan, however, and the company will probably have to depend on the Texas & St. Louis for a time.

**Indiana, Bloomington & Western.**—That portion of the Eastern Extension between Springfield, O., and Troy was opened for business June 1. No date has yet been set for opening the whole line through to Indianapolis.

**International.**—The International Railway, of Canada, is now opened to Lake Megantic, within 13 miles of the Maine state line. Two surveying parties, one between Lake Megantic and Greenville, Me., at the foot of Moosehead Lake, and the other between Greenville and Mattawamkeag, Me., a station on the European & North American Railroad, returned last March, after being out all summer and winter. The contract is now let for grading from Lake Megantic easterly two miles beyond the line into Maine, and work has already begun. Greenville is also the point to which the Bangor & Piscataquis Railroad has surveyed for a 13-mile extension. The completion of these two roads to Greenville will give Bangor and Montreal very direct connection almost due east and west, and together with other roads constructed, will surround one of the most interesting regions of New England, which includes the sources of the Connecticut and Androscoggin rivers, the Rangeley lakes, Lake Connecticut, Dixville Notch, etc.

**Louisville, New Albany & Chicago.**—Track on the Air Line Division is now laid to Sheridan, Ind., 40 miles southeast from the old terminus at Delphi. Grading is progressing between Sheridan and Indianapolis, though the work has been delayed by several causes.

Indianapolis papers state that the company will not build into that city, but will use the track of the Indianapolis, Peru & Chicago Division of the Wabash for some miles out of the city. The proposed Cincinnati Extension will prob-

ably start from the point where the junction with the Wabash is made. Nothing has yet been done on this extension.

**Manhattan Elevated.**—By agreement between the directors of this company and the Metropolitan Elevated, the annual meeting of the latter company has been postponed from July 11 to November, the date of the Manhattan meeting. Of this action the New York Times says:

"While the Gould party controls the directory of the Metropolitan Company, the majority of the company's capital stock is held by Messrs. Kneeland and Stout and persons in their interest, who have united in opposition to the Gould-Field-Sage scheme to supplant a guaranteed dividend of 10 per cent. for 6 per cent. But the Gould clique has declared that the Kneeland-Stout combination is held together only by reason of the fact that Mr. Kneeland and Mr. Stout hold proxies on outside stock, which proxies cannot be withdrawn until after the second Tuesday in July. Under the provisions of the Metropolitan by-laws the regular annual meeting of the shareholders of the company falls upon the second Tuesday of July. Assured of the support of a majority of the stockholders to a point beyond this date for the annual election, the opponents of the Gould party have planned to elect an entirely new board of directors, driving out Gould, Sage, Field and their followers. But the adoption of the Manhattan by-laws, postponing the annual election until November, gives the clique further time and opportunities to make their possession more secure. They have claimed that many of the shareholders acting with Mr. Kneeland and Mr. Stout are anxious to sever that connection, and will gladly fly to the Gould party. But, asked yesterday as to the reason for the adoption of the Manhattan by-laws, a representative of Mr. Gould declared 'that the object was far removed from any relation to the approaching election of directors. It was simply to bring the workings of the separate companies into union. It was for union, also, that a formal resolution was offered by José F. de Navarro, seconded by W. R. Garrison, setting forth that the next election of directors of the Metropolitan Elevated Railway Company be, and the same is hereby postponed from the second Tuesday in July, 1882, to the second Wednesday of November, 1882, at noon. The World says that the action taken was merely a matter of convenience, and that the change is strictly in accordance with law. This last statement is probably true.

**Mansfield.**—This road has been completed and will be opened for traffic in a few days. It is about seven miles long, extending from the town of Mansfield, La., east to Mansfield station on the New Orleans Pacific road. It has been built by local capital and will be worked under local management.

**Massachusetts Central.**—At the adjourned meeting of the stockholders of Boston, June 1, the report of the committee appointed at the previous meeting was presented by Mr. H. C. Hyde. This report, which has already been published, states in substance that \$937,000 will be required to complete the road, and recommends that second mortgage bonds to the amount of \$1,000,000 be issued for this purpose and to pay off the floating indebtedness; that the board of directors be reorganized, and that the lease with the Boston & Lowell Railroad Company be canceled and a contract be made with that or some other company for suitable terminal facilities. Mr. Hyde, having concluded the report, proceeded to explain various portions of it in detail and the law relating to the same. Relative to the recommendation that the board of directors be reorganized, he said that the gentlemen who were now on the board represented localities along the line of the road more than the moneyed interests, and for this reason the committee believed that a change should be made. As to the lease entered into with the Boston & Lowell Railroad Company several years since the committee believed that it should be canceled both because the relations between the two corporations had materially changed since the lease was made, and also because the road could be operated better and cheaper by its owners than under a lease. The only question now, he further said, was whether the plan of the committee was a practicable one. There was, indeed, only one other course open to the security holders, and that was to put the road into the hands of a receiver. If the plan suggested by the committee is adopted, the road, it is thought, can be completed and put into operation by Dec. 1. The amount of money then actually put into the road will aggregate about \$4,000,000, and the bonded indebtedness will be considerably less than that of any other road entering Boston. To complete the road from Jefferson to Ware will cost \$135,000, and take about 60 days, and that accomplished the road will begin to more than pay expenses, that is, to accumulate a surplus. This work can be going on while the other plan is being carried out, and thus will be a positive gain. Therefore, it is recommended that an immediate subscription of \$150,000 be raised for that purpose, which could be done by each holder of a \$1,000 bond subscribing \$50 and the stockholders their proportion. If this be done, whatever may be the present market value of the bonds, they will be worth 10 to 15 per cent. more when the extension to Ware is finished. This subscription may be reckoned as a part of the million, and need not be put under the second mortgage, since the time required for that would defeat the object of this suggestion. Mr. Hyde closed by reading a form for this subscription, dated June 1.

In the course of the discussion which followed, one or two speakers rather sharply criticized the management. President Boutwell stated that the road had been brought into its present condition partly by circumstances which could not be foreseen and partly by unwise action on the part of the directors and the syndicate committee. Estimates were made too low, and unexpected expenses to the amount of from \$200,000 to \$250,000 had been incurred; the great error had been in the purchase of steel rails, of which 10,000 tons have been bought at \$62 per ton. Of these all have been paid for except about 2,000 tons, on which the dues remain.

Finally the report of the investigating committee was adopted, and then Messrs. S. N. Aldrich, Lyman Hollingsworth, Moses W. Richardson, Elisha S. Converse and Charles R. McLean were appointed a committee to select a suitable committee to arrange for securing subscriptions to the new issue of bonds, letting the contracts for the completion of the road, and to arrange all other details incident to the carrying out of the investigating committee's recommendations. The meeting then adjourned, subject to the call of the new committee.

**Mexican National.**—Track on this road is now laid to Villadama, Mex., 110 miles from the Rio Grande at Laredo.

**Milwaukee, Lake Shore & Western.**—This road is now completed to Pelican Lake, Wis., 15 miles northward from the late terminus at Summit Lake, and 240 miles from Milwaukee.

The company is having surveys made for a branch from Pelican Lake west to the Wisconsin River. The object is to secure part of the lumber traffic going down the Wisconsin, which now goes to Jenny and Wausau.

**Missouri Pacific.**—The new Omaha Extension is completed, the last rail having been laid June 2. This extension starts from Atchison, Kan., and runs by Hiawatha, Falls



City, Neb., Dunbar, Sheridan, Weeping Water and Louisville to House Junction, 145 miles. From House Junction to Omaha, 17 miles, the Union Pacific track is used, making the distance from Atchison to Omaha, 162 miles. By this route it is 209 miles from Kansas City to Omaha, and 492 miles from St. Louis to Omaha.

**Newton Circuit.**—This company has filed articles of association with the Massachusetts Railroad Commission. The road is to be a branch of the Boston & Albany, and its proposed line is thus described by the Boston *Advertiser*: "The proposed route begins in the grounds at Brookline station, and runs westerly on the southerly side of the Woonsocket Division of the New York & New England. It is contemplated crossing Cypress street in Brookline and Glen avenue, Station and Centre streets in Newton Centre, at grade, and as close as possible to the grade crossing of the Woonsocket Division at these streets. All other streets will be crossed either above or below grade. Near Crystal Lake in Newton Centre a bridge will take the proposed line over the track of the Woonsocket division, and from thence the general direction is a little north of west, passing through the village of Newton Highlands near the Boston water works conduit, and crossing over to the north side of Beacon street, touching the city farm, and crossing under Washington street, near the end of Beacon street; thence bearing to the north, so as to connect with the main line of the Boston & Albany at Riverside. The alignment possible on this route is generally direct and favorable for passenger service, although more curved than the main line of the Boston & Albany between Riverside and Boston. The maximum grade is 57 ft. per mile, and the highest point is where the line crosses the Woonsocket division, it being 174 ft. above mean low water. No larger water way intercepts the line than can be provided for by stone culverts and drains. The general nature of the route is such as to require a considerable amount of excavation and embankment, and only in three cases is rock work encountered."

The estimated cost with double track is \$583,659, but of this \$178,657 can be saved by the use of the New York & New England's Woonsocket Division from Brookline to Crystal Lake, for which negotiations are now pending.

**New York Central & Hudson River.**—At the annual meeting in Albany, June 7, the stockholders voted to hold the annual election hereafter on the third Wednesday in April.

**New York, Texas & Mexican.**—The Houston (Tex.) *Post* of June 2 says: "The work of construction on the New York, Texas & Mexican road will be abandoned when it reaches Victoria, about the 17th of June. The reason given is the inability of the state to give satisfactory land-grants." It is possible also that the loan offered in London and New York was not satisfactorily placed.

**New York, West Shore & Buffalo.**—The *Utica Herald* says: "The line of the West Shore Railroad through Herkimer and Montgomery counties, is something over 66 miles in length. It runs through the towns of Frankfort, German Flats, Little Falls and Danube in Herkimer County, Minden, Canajoharie, Root, Glen and Florida in Montgomery County, leaving the county to enter Schenectady on the land of John H. Sherkey. The line of the new road is higher than that of the Central, at almost all points, and it avoids frequent crossings of the river. It crosses the canal in Herkimer County, and within a few miles recrosses it again to the south side, and it does the same in Montgomery. The very considerable engineering difficulties of constructing a railroad through these two counties on the route chosen have been greatly aggravated in the case of the West Shore road by the 'blue line troubles,' which have been protracted and severe. The road has been working from east to west, yet there is far more work to be done in Montgomery County than in Madison or Oneida, mile for mile. The line keeps close to the canal, and often approaches within the blue line—an imaginary line, running from 80 to 500 or more feet from the angle of the tow-path. To fully protect the interests of the state, the road has been put to heavy expense, and subjected to long-continued delays. These have occurred at many points along the line in these two counties, and especially near Little Falls. Here nature opposes obstacles enough, and persons not engineers have thought that the company might have secured an easier passage on the lower ground, and on toward Utica, in the valley bottom. It might have been less expensive in building and acquiring the right of way, but more bridges would have been needed, and to watch and keep in continued repair an iron bridge is expensive, delay from snow would be likely to be greater, and a continued fill of from five to ten feet, which would be necessary in the valley itself, would in the end have amounted to nearly as much as the cut on the hills. It would have had to be done with borrowed earth. After getting by the heavy work at Little Falls, too, for a long distance on either side the grading is not hard to make, and such a survey as the Burt Company has decided upon, it is firmly believed by West Shore engineers, never could be used by a railroad, on account of its interference with the State's water rights. Then the advantage mentioned of getting nearer to the villages is no small one, and the company has paid its way so liberally that it may be supposed to have gained the good will of many people living in them."

The contractors at work on this section of the road are Carver, Remington & Co., Belden, Denison & Co., Sprague & Martin, Jacob Small and John Hunter. These contractors have large forces at work at several points, and have made good progress on the rock-cutting and other heavy work, while much of the lighter grading is done. Of the bridges the *Herald* says:

"Excepting the canal bridges there are none of importance in Herkimer County. In Montgomery County the canal is crossed just east and west of Fort Plain, and at the village the Otsego Creek is crossed by a bridge of 100 ft. span; near Yatesville, Lasher's Creek is crossed by a bridge with two spans each 50 ft.; between Fultonville and Fort Jackson, Auriesville Creek calls for a bridge of 150 ft. span, and further east the Schoharie Creek will have a long bridge of three spans, each 150 ft., the piers for which are already constructed; in Fort Jackson, Chuctanunda Creek is crossed by a 120 ft. span. Work has been begun on the abutments for most of these bridges, and in some cases it is completed."

**Northern Pacific.**—It is announced that this company has concluded an agreement for the purchase from the St. Paul, Minneapolis and Manitoba Company of its line on the east side of the Mississippi from Watab, Minn., to Anoka, 54 miles. This line will be extended from Anoka to St. Paul, 27 miles, crossing the river at Anoka. This will give this company a line of its own from Watab to St. Paul, where it now uses the tracks of the Manitoba Company under lease.

**Norfolk & Western.**—Work continues actively in progress on the New River Division. Tracklaying is in progress, and the company hopes to have the line ready for use before fall.

The Philadelphia *North American* says: "The talk of a consolidation of the Norfolk & Western and the Shenandoah Valley is entirely premature. No such consummation is con-

templated by the managements until the Shenandoah Valley's capacity for originating and developing traffic has been tested by some time of full operation throughout its entire length, just completed. The traffic contract between the two roads mentioned and the East Tennessee, Virginia & Georgia, under which they combine for through business under the name of the Virginia, Tennessee & Georgia Air Line, is all the consolidation which will be desirable for a long time to come. The Virginia Legislature, in fact, adjourned without authorizing any consolidation, unreasonably fearing that it would do just what could be done under the traffic contract if the companies so desired, namely, draw away to Philadelphia and New York the southern and western trade, which might otherwise seek Norfolk and Richmond. It will be the policy of the roads, however, to develop local trade in Virginia as much as possible, and not to discriminate against any interest which would conduce to their own prosperity in the long run."

**Old Colony.**—This company has added to its line the Fall River road, from Fall River to New Bedford, 12½ miles, leased for 99 years at a rental of 30 per cent. of gross earnings, the lessee guaranteeing 5 per cent. interest on \$200,000. Last year the gross earnings of the road were \$29,805; net earnings, \$7,080. The rental on this basis would be \$9,940, or \$1,060 less than the guaranteed interest and \$1,910 more than the net earnings. The Old Colony can work the road to some advantage.

**Oregon Railway & Navigation Co.**—The section of road from the Dalles, Or., along the Columbia to Bonneville, just above the Lower Cascades, has been opened for travel. It is 44½ miles long, and has been a very costly piece of road, requiring much rock-cutting and other heavy work. Heretofore the connection between the transfer roads at the Dalles and the Cascades has been made by steambot; hereafter all the freight and probably most of the passenger business will go by rail, though one boat will be kept on the middle river to accommodate passengers who prefer that method of traveling.

**Oregon & Transcontinental Co.**—At the annual meeting in Portland, Or., June 19, supplementary articles of incorporation will be submitted for approval by the stockholders. These articles provide for the construction of a number of branches in Oregon, Washington and Idaho, covering nearly all the sections which are likely to be settled and yield traffic for years to come.

The following circular to the stockholders has been issued by President Villard: "One of the principal objects of the organization of this company was to construct, in its own interest as a large holder of the stocks of the Northern Pacific Railroad Company, such branches to the main line of that company as would be found necessary or requisite in order to increase the value of its land grant, to procure additional traffic by the development of the territory tributary to it, and to protect it from the encroachments of rival interests. Propositions to that end were exchanged as early as last summer between the two corporations, and in due course of time an agreement was reached on the following general basis: 1. That the Oregon & Transcontinental Company should promote and bring about the actual construction, under the ownership of local companies to be specially organized for the purpose, of such branch lines, and such only, as would be recommended, surveyed and located by the engineering department of the Northern Pacific Railroad Company from time to time. 2. That the Northern Pacific Railroad Company should undertake the actual operation of these branch lines under traffic contracts, by the terms of which a minimum net annual income of \$1,400 per mile of operated road should accrue to the branch companies, being equal to 6 per cent. per annum on \$20,000 per mile of bonded indebtedness and a sinking-fund charge of 1 per cent.; the Northern Pacific, however, not to become liable for such net income for two years after the completion and acceptance of each line, upon proper inspection and recommendation of its engineering department. 3. That the Oregon & Transcontinental Company should provide the money required for the construction of the branch lines, including interest on the bonds, until the same shall be provided for under the traffic contracts as above mentioned. 4. That the capital stock of each branch company constructed by the Oregon & Transcontinental Company should be deposited in trust, so that the Northern Pacific would exercise all the rights of ownership during the continuance of the trust, subject to compliance with the payment of the net income before mentioned, and would become the absolute owner of it upon the extinction of the funded indebtedness of each company by the operation of the sinking fund. Under the foregoing programme, the Oregon & Transcontinental Company has nearly completed over 200 miles of branch lines, and expects to complete, in the course of the present year, a total of about 400 miles, to be owned respectively by the following companies: The Little Falls & Dakota Railroad Company, of Minnesota; Fargo & Southwestern Railroad Company, of Dakota; Jamestown & Northern Railroad Company, of Dakota; Columbia & Palouse Railroad Company, of Washington Territory. Negotiations are pending for bringing in the Northern Pacific, Fergus & Black Hills branch, under the same arrangement, in which case 100 miles will be added to the foregoing mileage. In order to provide the means for mileage already built and to be built as described, the Oregon & Transcontinental Company has created a trust with the Farmers' Loan & Trust Company of New York, for the purpose of placing with that company all the bonds received in payment for the construction of branch lines not exceeding \$20,000 per mile of finished line, and of issuing thereupon an equal amount of its own 40-year 6 per cent. first-mortgage trust bonds, payable in gold coin, with semi-annual interest, commencing Nov. 1, 1892, and redeemable at not exceeding 105 and interest, by purchase or drawings under the provisions of their sinking fund. These bonds will thus represent a triple security—a direct obligation of the Oregon & Transcontinental Company, which has no other bonded indebtedness; a first mortgage on completed road not exceeding \$20,000 per mile, and a guarantee of income sufficient to pay interest and sinking-fund charges on these bonds by the Northern Pacific, making them a first-class security in all respects. These bonds are offered to you at 90 and accrued interest. Payment to be made in five equal installments of 20 per cent. each, as follows: July 1, 1892, 20 per cent.; Sept. 1, 1892, 20 per cent.; Nov. 1, 1892, 20 per cent.; Jan. 1, 1893, 20 per cent.; March 1, 1893, 20 per cent. Subscribers to have the privilege of prepayment on any installment date, with allowance of interest at 6 per cent. Application may be made for any amount desired. Allotments will be made by special circular, and as nearly proportionate to stock interest as possible, according to the holding of record June 22, 1892. Subscriptions will be received until July 1, and should be addressed to Henry Villard, President."

**Pennsylvania.**—The Juniata Branch, in the Clearfield coal region, has been completed from a junction with the Scotia Branch of the Tyrone Division to Juniata, Pa., a distance of 2.1 miles. It is a coal branch.

**Philadelphia & Atlantic City.**—In the New Jersey Court of Chancery, June 5, an application of Wm. L. El-

kins, a stockholder, a temporary injunction was granted, prohibiting the Camden & Atlantic Company from completing the purchasing of this road.

**Philadelphia & Reading.**—The *North American* of June 1 says: "Yesterday was the last day upon which the Reading Railroad Company, under the terms of its general mortgage can deposit funds with the Fidelity Trust Company for the redemption of its general mortgage sixes for the sinking fund at the drawing payable July 1. No payment, however, was reported made up to the close of business, and it was evident that the recent notice given the Trust by the Reading was merely made in order that it might be legally possible to pay them on July 1 if it should prove financially possible, as was then anticipated. The street made up its mind some days ago that the general mortgages would not be redeemed this year, but the certainty that this desirable investment would remain undisturbed for some time to come caused an advance yesterday to 97."

"The Receivers of the Reading Railroad announce that they will purchase the June coupons of the Colebrookdale Railroad sixes at 4 per cent. per annum on and after Tuesday next."

**Pittsburgh & Monongahela Valley.**—A contract for grading 30 miles of this road, from Pittsburgh southward toward the West Virginia line, has been let to James H. Connor, who is to begin work at once. For some 20 miles the line is parallel and close to the Pittsburgh Southern road.

**Quebec, Montreal, Ottawa & Occidental.**—The contract for the sale of the Eastern Division (Quebec to Montreal) has been signed, and the Quebec government has transferred the road to the purchasers, L. A. Senecal and associates.

**St. Croix & Chippewa River.**—This company has filed articles of incorporation in Wisconsin to build a railroad from the St. Croix Lake, near Catfish Bar, to River Falls and thence to Durand in Pepin County. It will be about 50 miles long.

**St. Paul, Minneapolis & Manitoba.**—It is announced that this company has sold to the Northern Pacific its line on the east side of the Mississippi from Anoka, Minn., to Watab, 54 miles, which has heretofore been used by both companies. This company will at once extend the line which it owns on the west side of the river from Minneapolis to Clearwater, from the last-named place to St. Cloud, about 12 miles. This arrangement gives to each company an independent line between St. Paul and St. Cloud.

**St. Paul, Minneapolis & Sea Coast.**—This company has been organized to build a railroad from St. Paul, Minn., to Clinton, Ia., and thence to Peoria or some other point in Illinois, where an eastern connection can be secured.

**Salvador.**—The republic of Salvador, Central America, is making its first attempt in railroad building, and the line from Acajutla to Sonsonate will be opened this month. Considerable interest is felt in the success of another railroad enterprise, a concession for which was granted to Gen. Butterfield, of New York, some months ago. It is known as the Central Railroad of Salvador. Starting from the capital it traverses the central valleys of the republic, passing by the celebrated lake of Idopango, the cities of Cojutepeque, San Vicente and San Miguel, and making its terminal point at La Union, on the gulf of Fonseca.

**Shenandoah Valley.**—The last rail on the extension of this road was laid last week, and on May 31 a train ran through to Roanoke, Va., the junction with the Norfolk & Western road, 238 miles from the northern terminus at Hagerstown, Md. The ballasting and finishing work are nearly done, and the road will be opened for travel June 19.

The road runs from Hagerstown due south to the Potomac, crossing at Shepherdstown, and thence runs south by west up the Shenandoah Valley, crossing the Chesapeake & Ohio at Waynesboro and reaching the Norfolk & Western at Roanoke. Its general course is on the eastern side of the valley, parallel to but 12 to 15 miles away from the Valley Branch of the Baltimore & Ohio. The lower valley is an extremely rich agricultural region, and the upper valley, while also noted for its fine farms, is rich in iron and other minerals, which are expected to give some traffic to the road. The road also touches the Luray Cavern and the mineral springs of the upper valley, and will probably develop a considerable travel to these resorts.

From Hagerstown the road has two outlets eastward, the Cumberland Valley road to Harrisburg and Philadelphia, and the Western Maryland to Baltimore. It has connections with Richmond over the Chesapeake & Ohio and the Richmond & Allegheny. For through business to and from the South and the Southwest, it is united in a contract with the Norfolk & Western and the East Tennessee, Virginia & Georgia, under which the three roads will be substantially under one management as the Virginia, Tennessee & Georgia Air Line.

The main line is now completed, and the only work of construction still contemplated by the company is the building of some short spurs and branches to iron mines in the upper valley, as they may be needed from time to time.

**Union Pacific.**—Under the time-table which went into effect June 3, the fast express over the Kansas Division, makes the run of 639 miles from Kansas City to Denver, in 22¼ hours, an average of 28.09 miles an hour. This express also runs through to Cheyenne, connecting there with the through express from Omaha to San Francisco.

**Venice & Carondelet.**—This road was formally opened for business May 31. It is 12 miles long, extending around East St. Louis from Venice, on the Mississippi above that town to East Carondelet on the river below. It is a belt or transfer road, intended to connect all the roads coming to St. Louis on the east side of the river. It is controlled by the Illinois & St. Louis Company.

**West Jersey.**—Track has been all laid on the Sea Island City Branch, from the junction with the main line, one mile north of Seaville, N. J., and 20 miles from Cape May, east to Sea Island City, on what was formerly known as Ludlam's Beach. The branch is 4.7 miles long.

**West Virginia Central & Pittsburgh.**—Contracts for the grading and masonry of the extension from the present terminus at Load House, Md., to the Fairfax Stone, 37 miles, have been let to John Humbird & Sons, Caran, Codwise & Co., and Adams & Kennedy. The station at the Fairfax Stone, which marks the boundary between Maryland and West Virginia, will be called Elkins. The contractors are to begin work at once.

**Wheeling & Lake Erie.**—The repair shops of this road are to be at Norwalk, O. The contract for the buildings has been let to D. K. Cramer & Co., of Toledo, O., who are to begin work at once.

**Wisconsin Central.**—This company has decided to build from Oshkosh, Wis., to Neenah on its Milwaukee Extension, instead of leasing tracks. The route will be close to the Chicago & Northwestern track all the way.